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VALUES OF FOREIGN COINS.

The following statements show the valuation of foreign coins, as given by the Director of the United States Mint and published by the Secretary of the Treasury, in compliance with the first section of the act of March 3, 1873, viz: "That the value of foreign coins, as expressed in the money of account of the United States, shall be that of the pure metal of such coin of standard value," and that "the value of the standard coins in circulation of the various nations of the world shall be estimated annually by the Director of the Mint, and be proclaimed on the 1st day of January by the Secretary of the Treasury."

In compliance with the foregoing provisions of law, annual statements were issued by the Treasury Department, beginning with that issued on January 1, 1874, and ending with that issued on January 1, 1890. Since that date, in compliance with the act of October 1, 1890, these valuation statements have been issued quarterly, beginning with the statement issued on January 1, 1891.

These estimates "are to be taken (by customs officers) in computing the value of all foreign merchandise made out in any of said currencies, imported into the United States."

The following statements, running from January 1, 1874, to April 1, 1894, have been prepared to assist in computing the proper values in American money of the trade, prices, values, wages, etc., of and in foreign countries, as given in consular and other reports. The series of years are given so that computations may be made for each year in the proper money values of such year. In hurried computations, the reductions of foreign currencies into American currency, no matter for how many years, are too often made on the bases of latest valuations. When it is taken into account that the ruble of Russia, for instance, has fluctuated from 77.17 cents in 1874 to 37.2 cents in April, 1894, such computations are wholly misleading. All computations of values, trade, wages, prices, etc., of and in the "fluctuating-currency countries" should be made in the values of their currencies in each year up to and including 1890, and in the quarterly valuations thereafter.

To meet typographical requirements, the quotations for the years 1876, 1877, 1879, 1881, and 1882 are omitted, these years being selected as showing the least fluctuations when compared with years immediately preceding and following.

To save unnecessary repetition, the estimates of valuations are divided into three classes, viz: (A) countries with fixed currencies, (B) countries with fluctuating currencies, and (C) quarterly valuations of fluctuating currencies.

A.—*Countries with fixed currencies.*

The following official (United States Treasury) valuations of foreign coins do not include "rates of exchange." It follows, therefore, that when foreign money orders are required, the post-office authorities, to save the Department from incurring loss in such transactions, add the rate of exchange to these valuations.

Countries.	Standard.	Monetary unit.	Value in terms of United States gold.	Coins.
Argentine Republic*	Gold and silver	Peso	$0.96,5	Gold—Argentine ($4.82,4) and ½ Argentine; silver—peso and divisions.
Austria-Hungary†	Gold	Crown	.20,3	Gold—20 crowns ($4.05,2) and 10 crowns.
Belgium	Gold and silver	Franc	.19,3	Gold—10 and 20 franc pieces; silver—5 francs.
Brazil	Gold	Milreis	.54,6	Gold—5, 10, and 20 milreis; silver—½, 1, and 2 milreis.
British North America (except Newfoundland)).	do	Dollar	1.00	
Chile‡	Gold and silver	Peso	.91,2	Gold—escudo ($1.82,4), doubloon ($4.56,1), and condor ($9.12,8); silver—peso and divisions.
Cuba	do	do	.92,6	Gold—doubloon ($5.01,7); silver—peso.
Denmark	Gold	Crown	.26,8	Gold—10 and 20 crowns.
Egypt	do	Pound (100 piasters).	4.94,3	Gold—10, 20, 50, and 100 piasters; silver—1, 2, 10, and 20 piasters.
Finland	do	Mark	.19,3	Gold—10 and 20 marks ($1.93 and $3.85,9).
France	Gold and silver	Franc	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Germany	Gold	Mark	.23,8	Gold—5, 10, and 20 marks.
Great Britain	do	Pound sterling	4.86,6½	Gold—sovereign (pound sterling) and half sovereign.
Greece	Gold and silver	Drachma	.19,3	Gold—5, 10, 20, 50, and 100 drachmas; silver—5 drachmas.
Haiti	do	Gourde	.96,5	Silver—gourde.
Italy	do	Lira	.19,3	Gold—5, 10, 20, 50, and 100 lire; silver—5 lire.
Liberia	Gold	Dollar	1.00	
Netherlands§	Gold and silver	Florin	.40,2	Gold—10 florins; silver—½, 1, and 2½ florins.
Newfoundland	Gold	Dollar	1.01,4	Gold—$2 ($2.02,7).
Portugal	Gold	Milreis	1.08	Gold—1, 2, 5, and 10 milreis.
Spain	Gold and silver	Peseta	.19,3	Gold—25 pesetas; silver—5 pesetas.
Sweden and Norway	Gold	Crown	.26,8	Gold—10 and 20 crowns.
Switzerland	Gold and silver	Franc	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Turkey	Gold	Piaster	.04,4	Gold—25, 50, 100, 200, and 500 piasters.
Venezuela	Gold and silver	Bolivar	.19,3	Gold—5, 10, 20, 50, and 100 bolivars; silver—5 bolivars.

* In 1874 and 1875 the gold standard prevailed in the Argentine Republic. Its currency does not appear in the statements again until 1883, when the double standard prevailed, and the peso attained a fixed value of 96.5 cents.

† On reference to the table of "fluctuating currencies," it will be seen that Austria had the silver standard up to and including the quarter ending July 1, 1892. The next quarter (October 1) inaugurated the gold standard (*see* note under table of "fluctuating currencies").

‡ The gold standard prevailed in Chile until January 1, 1890. The value of the peso has been the same under both standards.

§ The Netherlands florin, as will be seen in the "fluctuating" table, became fixed in value (40.2 cents) in 1880.

B.—*Countries with fluctuating currencies, 1874-'90.*

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1874.	1875.	1878.	1880.	1883.	1884.
Austria-Hungary*.	Silver	Florin	$0.47,6	$0.45,3	$0.45,3	$0.41,3	$0.40,1	$0.39,8
Bolivia	do	Dollar until 1880; boliviano thereafter.	.96,5	.96,5	.96,5	.83,6	.81,2	.80,6
Central America	do	Peso	.96,5	.91,8	.91,8	.83,6	.....	.....
China	Silver	Haikwan tael	1.61	1.61	.....	.....	.....	.....
Colombia	do	Peso	.96,5	.96,5	.96,5	.83,6	.81,2	.80,6
Ecuador	do	do	.96,5	.91,8	.91,8	.83,6	.81,2	.80,6
Egypt†	Gold	Pound (100 piasters).	.....	.....	4.97,4	4.97,4	4.90	4.90
India	Silver	Rupee	.45,8	.43,6	.43,6	.39,7	.38,6	.38,3
Japan	Gold	Yen	.99,7	.99,7	.99,7	.99,7	.....	.....
	Silver		.....	.....	.....	.....	.87,6	.86,9
Mexico	do	Dollar	1.04,7½	.99,8	.99,8	.90,9	.88,2	.87,5
Netherlands‡	Gold and silver	Florin	.40,5	.38,5	.38,5	.40,2	.....	.....
Peru	Silver	Sol	.92,5	.91,8	.91,8	.83,6	.81,2	.80,6
Russia	do	Ruble	.77,17	.73,4	.73,4	.66,9	.65	.64,5
Tripoli	do	Mahbub of 20 piasters.	.87,09	.82,9	.82,9	.74,8	.73,3	.72,7

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1885.	1886.	1887.	1888.	1889.	1890.
Austria-Hungary*.	Silver	Florin	$0.39,3	$0.37,1	$0.35,9	$0.34,5	$0.33,6	$0.42
Bolivia	do	Dollar until 1880; boliviano thereafter.	.79,5	.75,1	.72,7	.69,9	.68	.85
Central America	do	Peso	.....	.....	.....	.69,9	.68	.85
Colombia	do	do	.79,5	.75,1	.72,7	.69,9	.68	.85
Ecuador	do	do	.79,5	.75,1	.72,7	.69,9	.68	.85
Egypt†	Gold	Pound (100 piasters).	4.90	4.90	4.94,3	4.94,3	4.94,3	4.93,3
India	Silver	Rupee	.37,8	.35,7	.34,6	.33,2	.32,3	.40,4
Japan	Gold	Yen	.....	.....	.99,7	.99,7	.99,7	.99,7
	Silver		.85,8	.81	.78,4	.75,3	.73,4	.91,7
Mexico	do	Dollar	.86,4	.81,6	.79	.75,9	.73,9	.92,3
Peru	Silver	Sol	.79,5	.75,1	.72,7	.69,9	.68	.85
Russia	do	Ruble	.63,6	.60,1	.58,2	.55,9	.54,4	.68
Tripoli	do	Mahbub of 20 piasters.	.71,7	.67,7	.65,6	.63	.61,4	.76,7

* The silver standard prevailed in Austria-Hungary up to 1892. The law of August 2 of that year (*see* CONSULAR REPORTS, No. 147, p. 623) established the gold standard.

† The Egyptian pound became fixed in value at $4.94,3 in 1887.

‡ The Netherlands florin fluctuated up to the year 1880, when it became fixed at 40.2 cents.

C.—*Quarterly valuations of fluctuating currencies.*

Countries.	Monetary unit.	1893.				1894.			
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.	April 1.	July 1.	Oct. 1.
Bolivia	Silver boliviano.	$0.61,3	$0.61	$0.60,4	$0.53,1	$0.51,6	$0.46,5	$0.45,7	$0.46,4
Central America	Silver peso	.61,3	.61	.60,4	.53,1	.51,6	.46,5	.45,7	.46,4
China*	Shanghai tael	.90,6	.90,1	.89,2	.78,4	.76,2	.68,6	.67,6	.68,5
	Haikwan tael	1.01	1.00,4	.99,4	.87,4	.84,9	.76,5	.75,3	.76,3
	Tien-Tsin tael								.72,7
	Chefoo tael								.71,7
Colombia	Silver peso	.61,3	.61	.60,4	.53,1	.51,6	.46,5	.45,7	.46,4
Ecuador	do	.61,3	.61	.60,4	.53,1	.51,6	.46,5	.45,7	.46,4
India	Silver rupee	.29,2	.29	.28,7	.25,2	.24,5	.22,1	.21,7	.22
Japan†	Silver yen	.66,1	.65,8	.65,1	.57,3	.55,6	.50,1	.49,3	.50
Mexico	Silver dollar	.66,6	.66,2	.65,6	.57,7	.56	.50,5	.49,7	.50,4
Peru	Silver sol	.61,3	.61	.60,4	.53,1				
Russia‡	Silver ruble	.49,1	.48,8	.48,3	.42,5	.51,6	.46,5	.45,7	.46,4
Tripoli	Silver mahbub	.55,3	.55	.54,5	.47,9	.41,3	.37,2	.36,6	.37,1
Venezuela ⁋	Silver bolivar					.46,5	.41,9	.41,3	.41,8

Countries.	Monetary unit.	1895.				1896.		
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1,	April 1.	July 1.
Bolivia	Silver boliviano	$0.45,5	$0.44,1	$0.48,6	.48,6	$0.49,1	$0.49,3	$0.49,7
Central America	Silver peso	.45,5	.44,1	.48,6	.48,6	.49,1	.49,3	.49,7
China*	Shanghai tael	.67.3	.65,2	.71,8	.71,8	.72,5	.72,9	.73,5
	Haikwan tael	.74,9	.75,6	.80	.80,0	.80,8	.81,2	.81,9
	Tien-Tsin tael	.71,4	.69,2	.76,1	.76,2	.76,9	.77,3	.78
	Chefoo tael	.70,4	.68,3	.75,1	.75,2	.75,9	.76,3	.76,9
Colombia	Silver peso	.45.5	.44,1	.48,6	.48,6	.49,1	.49,3	.49,7
Ecuador	do	.45,5	.44,1	.48,6	.48,6	.49,1	.49,3	.49,7
India	Silver rupee	.21,6	.21,0	.23,1	.23,1	.23,3	.23,4	.23,6
Japan†	Silver yen	.49,1	.47,6	.52,4	.52.4	.52,9	.53,2	.53,2
Mexico	Silver dollar	.49,5	.47,9	.52,8	.52,8	.53,3	.53,6	.54
Persia	Silver kran				.08,9	.09,0	.09	.09,1	.09,2
Peru	Silver sol	.45,5	.44,1	.48,6	.48,6	.49,1	.49,3	.49,7
Russia‡	Silver ruble	.36,4	.35,3	.38,9	.38,9	.39,3	.39,5	.39,8
Tripoli	Silver mahbub	.41,1	3.9,8	.43,8	.43,8	.44,3	.44,5	.44,9

* China (silver). The Haikwan tael is the customs tael, and the Shanghai tael that used in trade. Consul-General Denny (CONSULAR REPORTS No. 43, p. 516) says: "The value of the tael varies in the different ports of China, and every port has two taels, one being the Government, or Haikwan, tael, in which all duties have to be paid, and the other the market tael, the former exceeding the latter by some 11 per cent."

† Gold is the nominal standard in Japan, but silver is practically the standard. The fixed value of the gold yen is 99.7 cents.

‡ The gold ruble is valued at 77.2 cents. Silver is the nominal standard, but paper is the actual currency, and its depreciation is measured by the gold standard.

⁋ The Venezuelan bolivar became fixed in value (19.3 cents) on January 1, 1893.

FOREIGN WEIGHTS AND MEASURES.

The following table embraces only such weights and measures as are given from time to time in CONSULAR REPORTS and in Commercial Relations:

Foreign weights and measures, with American equivalents.

Denominations.	Where used.	American equivalent.
Almude	Portugal	4.422 gallons.
Ardeb	Egypt	7.6907 bushels.
Are	Metric	0.02471 acre.
Arobe	Paraguay	25 pounds.
Arratel or libra	Portugal	1.011 pounds.
Arroba (dry)	Argentine Republic	25.3175 pounds.
Do.	Brazil	32.38 pounds.
Do.	Cuba	25.3664 pounds.
Do.	Portugal	32.38 pounds.
Do.	Spain	25.36 pounds.
Do.	Venezuela	25.4024 pounds.
Arroba (liquid)	Cuba, Spain, and Venezuela	4.263 gallons.
Arshine	Russia	28 inches.
Arshine (square)	do.	5.44 square feet.
Artel	Morocco	1.12 pounds.
Baril	Argentine Republic and Mexico	20.0787 gallons.
Barrel	Malta (customs)	11.4 gallons.
Do.	Spain (raisins)	100 pounds.
Berkovet	Russia	361.12 pounds.
Bongkal	India	832 grains.
Bonw	Sumatra	7,096.5 square meters.
Bu	Japan	0.1 inch.
Butt (wine)	Spain	140 gallons,
Caffiso	Malta	5.4 gallons.
Candy	India (Bombay)	529 pounds.
Do.	India (Madras)	500 pounds.
Cantar	Morocco	113 pounds.
Do.	Syria (Damascus)	575 pounds.
Do.	Turkey	124.7036 pounds.
Cantaro (Cantar)	Malta	175 pounds.
Carga	Mexico and Salvador	300 pounds.
Catty	China	1.333⅓ (1⅓) pounds.
Do.	Japan	1.31 pounds.
Do.	Java, Siam, Malacca	1.35 pounds.
Do.	Sumatra	2.12 pounds.
Centaro	Central America	4.2631 gallons.
Centner	Bremen and Brunswick	117.5 pounds.
Do.	Darmstadt	110.24 pounds.
Do.	Denmark and Norway	110.11 pounds.
Do.	Nuremberg	112.43 pounds.
Do.	Prussia	113.44 pounds.
Do.	Sweden	93.7 pounds.
Do.	Vienna	123.5 pounds.
Do.	Zollverein	110.24 pounds.
Do.	Double or metric	220.46 pounds.
Chih	China	14 inches.
Coyan	Sarawak	3,098 pounds.
Do.	Siam (Koyan)	2,667 pounds.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalent.
Cuadra	Argentine Republic	4 2 acres.
Do	Paraguay	78.9 yards.
Do	Paraguay (square)	8.077 square feet.
Do	Uruguay	Nearly 2 acres.
Cubic meter	Metric	35.3 cubic feet.
Cwt. (hundredweight)	British	112 pounds.
Dessiatine	Russia	2.6997 acres.
Do	Spain	1.599 bushels.
Drachme	Greece	Half ounce.
Dun	Japan	1 inch.
Egyptian weights and measures	(*See* CONSULAR REPORTS No. 144.)	
Fanega (dry)	Central America	1.5745 bushels.
Do	Chile	2.575 bushels.
Do	Cuba	1.599 bushels.
Do	Mexico	1.54728 bushels.
Do	Morocco	Strike fanega, 70 lbs.; full fanega, 118 lbs.
Do	Uruguay (double)	7.776 bushels.
Do	Uruguay (single)	3.888 bushels.
Do	Venezuela	1.599 bushels.
Fanega (liquid)	Spain	16 gallons.
Feddan	Egypt	1.03 acres.
Frail (raisins)	Spain	50 pounds.
Frasco	Argentine Republic	2.5096 quarts.
Do	Mexico	2.5 quarts.
Fuder	Luxemburg	264 17 gallons.
Garnice	Russian Poland	0.88 gallon.
Gram	Metric	15.432 grains.
Hectare	do	2.471 acres.
Hectoliter:		
Dry	do	2.838 bushels.
Liquid	do	26.417 gallons.
Joch	Austria-Hungary	1.422 acres.
Ken	Japan	4 yards.
Kilogram (kilo)	Metric	2.2046 pounds.
Kilometer	do	0.62376 mile.
Klafter	Russia	216 cubic feet.
Kota	Japan	5.13 bushels.
Korree	Russia	3 5 bushels.
Last	Belgium and Holland	85.134 bushels.
Do	England (dry malt)	82.52 bushels.
Do	Germany	2 metric tons (4,480 pounds).
Do	Prussia	112.29 bushels.
Do	Russian Poland	11 3/8 bushels.
Do	Spain (salt)	4,760 pounds.
League (land)	Paraguay	4,633 acres.
Li	China	2,115 feet.
Libra (pound)	Castilian	7,100 grains (troy).
Do	Argentine Republic	1.0127 pounds.
Do	Central America	1.043 pounds.
Do	Chile	1.014 pounds.
Do	Cuba	1.0161 pounds.
Do	Mexico	1.01465 pounds.
Do	Peru	1.0143 pounds.
Do	Portugal	1.011 pounds.
Do	Uruguay	1.0143 pounds.
Do	Venezuela	1.0161 pounds.
Liter	Metric	1.0567 quarts.
Livre (pound)	Greece	1.1 pounds.
Do	Guiana	1.0791 pounds.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalent.
Load	England (timber)	Square, 50 cubic feet; unhewn, 40 cubic feet; inch planks, 600 superficial feet.
Manzana	Costa Rica	1¾ acres.
Marc	Bolivia	0.507 pound.
Maund	India	82⅔ pounds.
Meter	Metric	39.37 inches.
Mil	Denmark	4.68 miles
Do	Denmark (geographical)	4.61 miles.
Morgen	Prussia	0.63 acre.
Oke	Egypt	2.7225 pounds.
Do	Greece	2.84 pounds.
Do	Hungary	3.0817 pounds.
Do	Turkey	2.85418 pounds.
Do	Hungary and Wallachia	2.5 pints.
Pic	Egypt	21¼ inches.
Picul	Borneo and Celebes	135.64 pounds.
Do	China, Japan, and Sumatra	133⅓ pounds.
Do	Java	135.1 pounds.
Do	Philippine Islands (hemp)	139.45 pounds.
Do	Philippine Islands (sugar)	140 pounds.
Pie	Argentine Republic	0.9478 foot.
Do	Castilian	0.91407 foot.
Pik	Turkey	27.9 inches.
Pood	Russia	36.112 pounds.
Pund (pound)	Denmark and Sweden	1.102 pounds.
Quarter	Great Britain	8.252 bushels.
Do	London (coal)	36 bushels.
Quintal	Argentine Republic	101.42 pounds.
Do	Brazil	130.06 pounds.
Do	Castile, Chile, Mexico, and Peru	101.61 pounds.
Do	Greece	123.2 pounds.
Do	Newfoundland (fish)	112 pounds.
Do	Paraguay	100 pounds.
Do	Syria	125 pounds.
Do	Metric	220.46 pounds.
Rottle	Palestine	6 pounds.
Do	Syria	5¼ pounds.
Sagen	Russia	7 feet.
Salm	Malta	490 pounds.
Se	Japan	3.6 feet.
Seer	India	1 pound 13 ounces.
Shaku	Japan	10 inches.
Sho	do	1.6 quarts.
Standard (St. Petersburg)	Lumber measure	165 cubic feet.
Stone	British	14 pounds.
Suerte	Uruguay	2,700 cuadras (*see* cuadra).
Tael	Cochin China	590.75 grains (troy).
Tan	Japan	0.25 acre.
To	do	2 pecks.
Ton	Space measure	40 cubic feet.
Tonde (cereals)	Denmark	3.94783 bushels.
Tondeland	do	1.36 acres.
Tsubo	Japan	6 feet square.
Tsun	China	1.41 inches.
Tunna	Sweden	4.5 bushels.
Tunnland	do	1.22 acres.
Vara	Argentine Republic	34.1208 inches.
Do	Castile	0.914117 yard.
Do	Central America	38.874 inches.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalent.
Vara	Chile and Peru	33.367 inches.
Do	Cuba	33.384 inches.
Do	Curaçao	33.375 inches.
Do	Mexico	33 inches.
Do	Paraguay	34 inches.
Do	Venezuela	33.384 inches.
Vedro	Russia	2.707 gallons.
Vergees	Isle of Jersey	71.1 square rods.
Verst	Russia	0.663 mile.
Vlocka	Russian Poland	41.98 acres.

METRIC WEIGHTS AND MEASURES.

Metric weights.

Milligram ($\frac{1}{1000}$ gram) equals 0.0154 grain.
Centigram($\frac{1}{100}$ gram) equals 0.1543 grain.
Decigram ($\frac{1}{10}$ gram) equals 1.5432 grains.
Gram equals 15.432 grains.
Decagram (10 grams) equals 0.3527 ounce.
Hectogram (100 grams) equals 3.5274 ounces.
Kilogram (1,000 grams) equals 2.2046 pounds.
Myriagram (10,000 grams) equals 22.046 pounds.
Quintal (100,000 grams) equals 220.46 pounds.
Millier or tonnea—ton (1,000,000 grams) equals 2,204.6 pounds.

Metric dry measure.

Milliliter ($\frac{1}{1000}$ liter) equals 0.061 cubic inch.
Centiliter ($\frac{1}{100}$ liter) equals 0.6102 cubic inch.
Deciliter ($\frac{1}{10}$ liter) equals 6.1022 cubic inches.
Liter equals 0.908 quart.
Decaliter (10 liters) equals 9.08 quarts.
Hectoliter (100 liters) equals 2.838 bushels.
Kiloliter (1,000 liters) equals 1.308 cubic yards.

Metric liquid measure.

Milliliter ($\frac{1}{1000}$ liter) equals 0.0388 fluid ounce.
Centiliter ($\frac{1}{100}$ liter) equals 0.338 fluid ounce.
Deciliter ($\frac{1}{10}$ liter) equals 0.845 gill.
Liter equals 1.0567 quarts.
Decaliter (10 liters) equals 2.6418 gallons.
Hectoliter (100 liters) equals 26.418 gallons.
Kiloliter (100 liters) equals 264.18 gallons.

Metric measures of length.

Millimeter ($\frac{1}{1000}$ meter) equals 0.0394 inch.
Centimeter ($\frac{1}{100}$ meter) equals 0.3937 inch.
Decimeter ($\frac{1}{10}$ meter) equals 3.937 inches.
Meter equals 39.37 inches.
Decameter (10 meters) equals 393.7 inches.
Hectometer (100 meters) equals 328 feet 1 inch.
Kilometer (1,000 meters) equals 0.62137 mile (3,280 feet 10 inches).
Myriameter (10.000 meters) equals 6.2137 miles.

Metric surface measures.

Centare (1 square meter) equals 1,550 square inches.
Are (100 square meters) equals 119.6 square yards.
Hectare (10,000 square meters) equals 2.471 acres.

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THE KONGO FREE STATE.*

BOMA.

On the 28th of April, 1892, I arrived at Boma, which is the capital of the Kongo Free State, and is situated on the right bank of the Kongo River. It presents a pretty appearance, all the trading houses on the beach being white-washed and looking very clean. The large hotel, of two stories, is in the center of the town, the trading house of Hatton & Cookson, of Liverpool, on the right, and the machine shops of the Government on the left. The grounds on the beach are well laid out and look very attractive with their many palms and banana trees. At the back of the town, on the plateau, is the governor's house, a large sheet-iron structure, situated in well-kept grounds; around it are the different offices and back of it the houses belonging to the chief officials and also the sanitarium. These are made either of brick or iron, and are very cool and comfortable. A great deal of taste has been displayed in their construction, and the whole effect is very pleasing. To the left are the barracks for the force publique, large, well-built brick buildings, constructed on modern military principles, and below these is a hospital for the negroes. A steam tram line connects the beach with the plateau.

Boma is surrounded with barren, reddish hills. The population is not dense, but two days' march north, in the Mayomba and Nzobie, there are a great number of people, whose principal industry is the collection of palm

*The limited appropriation for printing and binding the CONSULAR REPORTS has rendered it impossible to publish Mr. Mohun's report at an earlier date. Even now, only such extracts can be printed as relate more or less to the trade and commerce of the Kongo, with such descriptions of places and people as are clearly identified with such trade and commerce and necessary to a full appreciation thereof. Mr. Mohun's report is an itinerary, in the form of a diary, of his travels and adventures while associated with the Belgian forces, beginning with his leaving Boma for the Upper Kongo, on April 28, 1892, and closing with his leaving Boma for Antwerp and the United States, in August, 1894.

nuts and the manufacture of palm oil, which they sell to the traders for gin, rum, flintlock guns, powder, and cloth. Money is not current, and the silver and copper which have been issued by the State can hardly be said to be current among the natives, only a very few living near the State posts being willing to accept it, and that only in very small quantities. Near by, in the hills, a great deal of iron exists, but the mines have never been worked, excepting by the natives. To the northeast of Boma, there is a copper mine from which the natives have extracted some 5,000 pounds of copper, but very little has been brought down for sale, as the price paid hardly pays for its transport. The principal industry in this section of the Kongo Free State is the manufacture of palm oil. Natives bring the oil in balls and the white kernel in bags and sell them to the traders.

I believe some of the land between Banana and Boma would be excellent for coffee and cocoa raising.

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HISTORY OF THE LOWER KONGO.

According to the provisions of law authorizing the sending of a commercial agent, I visited the upper and lower valleys of the Kongo, and I do not think that I can begin better than by giving a short historical sketch of the Lower Kongo.

The Kongo River was discovered in 1485 by Diego Cam, a Portuguese naval officer, and for some years after this date it was known as the Rio de Padrao, or Pillar River, on account of the pillar erected by him at its mouth. It was also known as the Rio Poderoso, or Great River. Nearly one hundred years later it was called by Lopez the Zaire, and by that name it has been known ever since to the Portuguese and natives west of the Yellala Falls. The name Kongo is utterly unknown to the natives from source to mouth. Above Stanley Pool, to the Stanley Falls, the natives always refer to it as the "Big Water." From Stanley Falls south to its source it is known to everyone as the Lualaba, or Ugarrowa, and, gradually, this name is being used by those living on its banks west of Stanley Falls, who have been on expeditions for the Kongo Free State, to Nyangwé and Kassongo.

The real history of the Kongo begins in the early part of the sixteenth century, when the King of Kongo, through the efforts of Portuguese missionaries, was converted to Christianity, and its capital located at San Salvador, some 90 miles east, in a straight line from the coast. In 1534, a cathedral was consecrated and a bishop announced. Everything went well until 1570, when the town was attacked and burned by a neighboring savage tribe, and those of the inhabitants who escaped went to Boma; but, shortly afterwards, the King of Portugal sent reinforcements to expel the enemy, and the King of Kongo was replaced on his throne. In 1630, the then King broke allegiance with Portugal, and the bishopric, established one hundred years before, was removed to St. Paul de Loanda.

From that time to the present, San Salvador has been gradually dropping, until now it is nothing more than a native village, with a few ruins to show

how far civilization had advanced three hundred years ago. The Baptist Missionary Society of London has now been enabled to establish mission churches and schools there, but whether they are accomplishing anything I am unable to say. Frequently the roads to the coast are closed on account of internecine warfare.

To the north of the mouth of the Kongo lies Kabinda, established in 1784 by the Portuguese and afterwards abandoned as a military post, owing to several of the European powers protesting. This territory was at one time included within the limits of the Kongo Free State, but was returned to Portugal some years ago in exchange for territory in the southwestern part of the state. It is now occupied by the Portuguese, with a governor in charge.

A nondescript settlement had been made at Banana Point by subjects of several European countries who were engaged in the slave trade. They had agents in many of the estuaries and creeks of the enormous river, and constantly sent their cargoes of "black ivory" to Banana, where the slaves were kept in barracoons to await shipment to North and South America and the West Indies.

About 1820 or 1825, the first whites arrived at Boma, where they established factories for the purchase of slaves and, incidentally, the products of the country. This was the farthest inland that any white settlers reached until 1860, when the Portuguese and Dutch placed factories at Ango Ango and Fuca Fuca, just below the present site of Matadi. Nineteen years passed before any attempt was made to reach the interior, which had then been made known by Mr. Stanley, who had just descended the river.

In 1879, the Association Internationale Africaine sent Mr. Stanley to the Kongo to form the government, build stations, and distribute his officers and men throughout Central Africa in such a manner as to have the most far-reaching and best possible effect on the savage tribes, who had never been in contact with the whites. This Mr. Stanley successfully did, and finished the preliminary work in 1884, when he turned the administration over to Sir Francis de Winton, who had been appointed administrator-general. The association was formed into a government of its own under the name of Kongo Free State, and was soon afterwards (1884–85) recognized as an independent government by all the European powers and by the United States. It adopted as its flag that of His Majesty Dom Pedro, King of Kongo (commonly known as Totela), a blue field with a golden star in its center, and up to the present the Government has practically remained the same.

Leopold II, King of Belgium, was named sovereign of the Kongo Free State by the powers represented at the Berlin conference, and his Cabinet in Brussels, which consists of Ministers of State for Foreign Affairs, Finance, and Interior. The Brussels end of the Government is known as the "Bureau Centrale," and all orders to the Kongo branch pass through these officers.

The Government in Africa consists of a governor-general, a vice-governor-general, five inspectors of the state, who are distributed over the whole territory; a secretary-general; chief intendant, who has charge of all supplies and transport; and Departments of Justice, Finance, Marine, and Medicine. Then, in order, come the commissaries of districts, of whom there are thirteen; captains-commandant and officers of the "force publique," judges of courts, officers of the medical staff, subcommissaries of districts, subintendants, and clerks.

In the Marine Department are captains of the first, second, and third classes, commanding steamers and steam launches in both the High and Low Kongo, chief engineers and engineers of the first and second classes, boiler makers, and blacksmiths.

The heads of all these departments are stationed at Boma, and are directly responsible to the governor-general.

The Kongo Free State is divided into thirteen districts, as follows: Banana, Boma, Matadi, Cataracts, Stanley Pool, Ubanghi-Ouelle, Aruwimi-Ouelle, Equator, Kassai, Lualaba, Kwango, Oriental, and the Arab Zone, which formerly consisted of the districts of Stanley Falls and the administrative region of the Tantanika. In each one of these, with the exception of Boma, which comes directly under the governor-general, is to be found the following officers: Commissary of district, usually a judge; numerous officers of the force publique, a doctor, subcommissary of district, a subintendant, clerks, and mechanics. Each district usually has from 300 to 500 soldiers. In the district of the Ubanghi-Ouelle, there are 1,800 soldiers; in the Aruwimi-Ouelle, 800; and in the Arab Zone, 2,000.

Five inspectors of the state have these twelve districts under their immediate charge, and the commissaries of districts are under their immediate orders.

Camps for the instruction of recruits for the force publique are located at Boma, Kinchassa (on Stanley Pool), Irebu, Lusambo, and Kassonga. In each place 400 men are usually under drill, ready to be sent away as occasion demands.

MEANS OF REACHING THE KONGO FREE STATE.

The most direct route is by the steamers leaving Antwerp on the 6th of every month and arriving at Boma in twenty-four days. The agents are John P. Best & Co., 36 Place Verte, Antwerp, and Walford & Co., Antwerp; the Afrikanische Dampfschiffs (A. G. Woermann line), from Hamburg, Germany, every week, but stopping at all points on the north and west African coasts, forty to forty-five days to Boma; the Afrikaansche Handels Venootschap (commonly known as the A. H. V., or Dutch House), of Rotterdam, have their own steamers leaving every three weeks for Banana, twenty-two days to Banana; the Portugese Mail to San Antonio, opposite Banana, leaving Lisbon every week, twenty-two days to San Antonio; the Chargeurs Réunis, or French line, from Havre, and another French line from Marseilles, twenty-four days to Boma; the African Steamship Company

and British and African Steam Navigation Company, Limited, of Liverpool, send their steamers from Liverpool for north and west African ports every week, forty to forty-five days.

The line from Antwerp goes to Matadi, the other steamers only if they get a sufficient amount of cargo. The first-cabin fare from Antwerp is $160. The other lines charge the same. Freight by the Antwerp line is per ton of 40 cubic feet.

TRADING HOUSES IN THE KONGO FREE STATE.

The following are the trading houses in the High and Low Kongo: The Afrikaansche Handels Venootschap, with headquarters at Kabinda and factories at Banana, Boma, Matadi, Manyanga, Kinchassa, Kwamouth, Lulonga, Upoto, and Budja; Société Anonyme Belge pour le commerce du Haut Kongo, of Brussels, with headquarters at Kinchassa, Stanley Pool, and factories at Matadi, Manyanga, Luvitiku, Kinchassa, Kwamauth, Equator, Mobeka, Upoto, Budja, Yambinga, Bassoko, and Stanley Falls, all on the Kongo River; Zongo, Banzyville, Abiras, Bangasso, and Yakoma, on the Ouelle-Ubanghi River; Likimi and Kongo, on the Mongala River; Isassi, on the Rubi River; Bassankussu, on the Lopori River; several on the Maringa, Tchuapa, and Bussera rivers; Inongo, on Lake Leopold; Manghai, Nzonzadi, and Benna Luidi, Luebo, and Ngalikoko, on the Kassai; and Lodji, Mukikamu, Bukina, Bufu, Lubefu, and Inkongo, on the Sankuru River; Wamba and several others on the Djuma and Kongo rivers.

There have been established lately the Anglo-Belgian India Rubber Company, which has placed factories on the Lopori River, and one other small company operating on the Mongala River. These two last are said to be under the protection of the Kongo Free State Government.*

* * * * * * *

On the north bank are high white cliffs and these have been named the Dover Cliffs, on account of their supposed resemblance.

The Bateke is the native race here, but the population is not as dense as it was a few years ago, the people having moved away from the river bank into the mountains. Food is scarce and very expensive, a fowl often costing $2 and goats $10 to $12. This state of affairs is being improved, the State having established a market at Leopoldville, to which the natives are obliged to bring their products for sale twice a week, and very often it is not an uncommon sight to see from 3,000 to 4,000 people engaged in trade, bartering their products for brass rods, gunpowder, etc. Their staple article of food is "chiquanga," a kind of dough, made from the root of the manioc, and bananas and plaintains. Hippopotamus and elephant meat is sometimes offered for sale, but not often. Fish are abundant and frequently they are offered weighing from 90 to 120 pounds. Money in use is the

* A portion of this report has been published in SPECIAL CONSULAR REPORTS entitled Highways of Commerce, pp. 502–507, covering the following points: Means of reaching the Kongo Free State, packing and transporting loads, transport on the Upper Kongo, Kongo Railway, navigation on the Lower Kongo, transportation charges, etc.

brass rods, or "mitako," which are cut in lengths 8 inches long, and trade cloth, checks being preferred. I may state here that gin is not sold east of the Inkisi River, it having been prohibited by royal decree some years ago. I do not think it would have much sale if permitted, as the natives prefer their own wine, made from the sap of the palm tree.

The Société Anonyme Belge is the outcome of the "Sanford exploring expedition," organized some years ago in Brussels by General Sanford. This company has been most successful in exporting ivory and rubber, and I was given to understand that in 1892 and 1893 it paid 10 per cent dividend to the stockholders.

THE LOWER KONGO AND ITS PEOPLE.

From Banana to Boma, the country is flat, and, in the rainy season, very swampy. The banks are thickly wooded, but there is hardly any timber fit for export. Running east and west, starting some 20 miles north of Banana, there is a range of foothills which extend to and beyond Stanley Pool to Bolobo, increasing in height and width as they approach the Pool. This range is a continuation of the system which runs the entire length of the west and southwest coasts of Africa.

The land is not, in my opinion, suitable for agriculture, excepting in a small section near Banana Point. The only products of the soil shipped to Europe are palm kernels, palm oil, and peanuts, and these are the only articles which are traded for by factories in the Lower Kongo Valley. A few vegetables are grown in the gardens attached to each factory, but the soil has to be worked over and over again and watered two or three times a day in order to make them grow. No domestic animals exist among the natives, excepting a few goats and sheep, which command high prices. All the beeves which are consumed by the railroad company's employees are brought from Benguela and Mosamedes (on the southwest coast, in Portuguese territory), by the Compagnie de Produit du Congo, who have established a large cattle ranch on the island of Mateba, below Boma. There are now about 3,000 head there, and this herd is increasing. The tsetse fly does not exist. I do not believe the land is such, except in a few isolated cases, that it could be made to yield profitably without an enormous sum being expended for irrigation and fertilization. It is possible that, on the hills to the north of Banana, coffee might be grown advantageously, and cocoa in the lowlands, but the experiment has not yet been tried.

The articles used for trade with the natives are red bandana handkerchiefs, gin, cloth, beads, machetes, old silk hats, colored parasols, cheap knives, flintlock muskets, powder, brass rods, crockery ware, tinware, old uniform coats, old derby hats, rum, cheap watches, and cologne. All these articles are specially made for the trade, and the standard of value is a piece of handkerchief 24 feet long and 3 feet broad and valued at 60 cents. When the trader buys produce he gives out cards to the natives, which are good each for one piece of handkerchief, and when the caravan has been bought out the natives

come to the fetich, or store, and hand in their cards, where they can select what they want to the value of the cards held. As a rule, they will not touch money, regarding it as useless, and this, of course, is a great advantage to the trader, who makes large profits in exchange for handkerchiefs, which probably cost him, landed in the Kongo, duty paid, 20 cents apiece. In one day at Boma I have seen over 1,000 natives come with kernels and oil, each man carrying at least 65 pounds weight.

The quantity of gin which comes into the Kongo is enormous, but none of this ever reaches the interior of the State, as its importation has been prohibited.

Very little ivory is bought in the Lower Kongo, and this comes from a distance of not more than 100 miles north, south, or east of Boma and Matadi. The large quantities of ivory which are being shipped from the Lower Kongo come entirely from the High Kongo. These shipments are increasing year by year, and I am convinced there is ivory enough in Central Africa to last at least another century. The natives of the Lower Kongo belong to the Fiote tribe, but there is absolutely no king or chief among them. There are some so-called kings, but they have no authority whatever and are only kings because they call themselves so, on account of having a few more brass rods, bales of cloth, or boxes of gin than their neighbors. Each village is independent of the other, and has its own headman, but no one recognizes the right of any one as their supreme ruler. Fetichism is largely practiced, and there is much quiet poisoning going on in the different villages by fetich doctors, but the hanging of several of these poisoners by the State has had a most salutary effect on the remainder. They practice no religion whatever; they worship no idols, no fire, sun, moon, or stars. If they wish to accomplish something they propitiate a wooden fetich by hanging beads and gin bottles about its neck and murmuring some jargon to it. If something is stolen from them, they drive a nail into the fetich, perfectly convinced that in this manner they will succeed in killing the thief. Near Boma, there is a native school of medicine, and the people who attend it for study are called "Imkimbas." During their term of study, they must keep themselves whitewashed or painted white from head to foot.

The natives are not particularly savage or vicious toward the white men. Only once in a while has the State found it necessary to send expeditions to enforce the laws. They have no arms of their own manufacture and for hunting and war purposes use the trade flintlock musket. When a native dies and is buried, if he is a rich man, his body is wrapped in hundreds of yards of cloth and many pounds of gunpowder are fired over his grave, which has been covered on top with empty gin bottles, demijohns, basins, and pitchers; at the head a large red, blue, and white umbrella is stuck in the ground and hoisted. At night, his friends and family indulge in a dance and drunken orgie, in which the latter take a prominent part. Their hair is usually dressed in some fantastic fashion; on their legs and

arms they usually wear large brass rings, and around their necks a necklace of beads or tin tags from packages of tobacco. Their only clothing consists of a breech clout, or piece of cloth tied around their loins; no head covering whatever. Their food consists usually of palm nuts, palm kernels, manioc, and bananas; also rats, crickets, and locusts. They are not a particularly strong or hearty people, their only strength lying in their legs, and it is very rare to meet one who has reached the age of fifty years, although many look a hundred. A great number die of pulmonary complaints.

MATADI TO STANLEY POOL.

I left Matadi August 29, going by train as far as the Mpozo River, distant 8 miles, being the first upcountry traveler to go by railway.

My caravan consisted of ninety-seven loads, each carried by a native porter, and consisting of provisions, tents, guns, ammunition, iron traveling trunks, and some bales of cloth; also, eight porters for my hammock. On arriving at the Mpozo, we encamped for the night, in order to be thoroughly rested to climb the Pallabala Mountain the next morning. At 6 o'clock I started on the road for Manyanga, 130 miles distant, and after eight days' march, through a mountainous, barren country, reached this place. Here, we changed carriers for Stanley Pool, but as none had arrived when I reached here, I was detained eight days. No carriers arriving for the Kongo State bank of the river, I was compelled to cross, and, having received permission from the French Government, made the route to Stanley Pool, through the French Kongo to Brazzaville, 95 miles distant, in five days. The authorities, both Belgian and French, facilitated my movements in every way.

The country, through which this caravan road passes between Matadi and the Pool, is the roughest I ever saw, it being one succession of mountains, and as the caravan road leads in almost a straight line, every mountain and hill is crossed, as the natives, when they originally commenced, never deviated for valleys, as they do not believe in going around mountains when they can go over them. These hills are of a reddish-clay color and have very little vegetation on them—only a few scrubby trees and long reed grass. The native villages have almost entirely disappeared from either side of the caravan road, and are now nearly 3 or 4 miles back. It is quite difficult to procure provisions of any sort, and fowls and goats command very high prices. Once in a while a small patch of trees, which is dignified by the name of forest, is met, but in only one place did I see verdant vegetation, and that was in the Lukungu Valley, which is some 4 miles broad and 50 to 60 miles long, distant from Manyanga 16 miles. Game abounds here, and in a day's hunting one can shoot anything from an elephant to a partridge. Elephants are numerous, as it is the only good feeding ground for miles around. Several times these beasts have come into the State posts and made things lively for the occupants of tents, who were resting there for the night. An elephant had been through the camp the day before I

arrived, and I saw the dead body lying in front of the commandant's house, where it had been shot.

The country, on either side of this valley, is not at all adapted to agricultural purposes, but in the valley almost anything can be grown, the soil being rich. The Lukungu River runs directly through the center. The natives are armed with flintlock muskets, and do not know the use of the spear or bow.

From what I can learn, with the exception of copper and iron, there are no minerals in the Lower Kongo. Iron is everywhere, but at the present moment would not pay to work on account of the transportation difficulties. As I said before, a copper mine exists 50 miles northeast of Vivi, and the mineral is of a fine quality, but only a small amount reaches the trader, the Dutch African company being the only one which has exported it, but hardly on a paying basis.

I was told at Manyanga that many specimens of quartz arrowheads and stone axes have been found, also the implements for the manufacture of these articles, but as I saw none myself I do not know what reliance can be placed upon this statement. It is said that they were discovered some distance below the surface, and if this is so, they are undoubtedly what were in use by the aborigines many hundred years ago.

CLIMATE.

The climate from the coast to the Pool is most enervating, especially at Matadi, where a difference of from 4° to 6° F. from Boma exists the year round. My own experience has been that the best way to combat it is as follows: Wear woolen undershirts and flannel overshirts; always have a good thick coat ready to put on while on the march, when a stop is made, to keep from catching cold; keep out of all drafts. Eat wholesome food, with very little fat to it, accompanied by a glass of good Bordeaux or Vino Tinto, which is very heavy Portuguese wine; nothing in the way of liquors should be taken in the middle of the day, only at dinner. Keep regular hours; take quinine and iron when you feel run down; do not allow yourself to become constipated. Do not indulge in highly spiced food, and reject all fatty or greasy substances. If you wish to drink spirits, do so in the evening, but not to excess, and then take only the very best that you can find.

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LAKE LEOPOLD.

Lake Leopold is a body of water containing some 2,200 superficial square miles. Its greatest breadth is 47 miles and length 101 miles. The greatest depth is 50 feet, just abreast of Inongo, and the least, near the center of the lake, where we found only 4 feet at low water. The rise and fall in the rainy and dry seasons is 8 feet, measured at Inongo. The water is the color of dark brandy, and has a slight iron taste. There is very little sediment when it settles. On the east, the shores are rockbound, with a peculiarly striped pumice stone, but on the west and northwest, white sandy beaches are found. Nearly the whole country is flat and covered with a dense forest.

At the northwest end is a small river, named N'Kelenghe, which, the natives informed me, communicates with a body of water to the north, named Matumba, and that the people from Irebu, on the Kongo, where Matumba empties into the river, come to their place to trade for ivory and slaves. They said that the passage was only large enough for canoes, and that in the dry season it was closed. In Lake Leopold are to be found very few hippopotamuses and in the Mfini there are also only a few; but in the plains, bordering on the lake, there are many antelope, buffalo, and elephant, also leopards in great numbers, which carry off many people. The soil in the plains is rich, being a dark loam. The people of the lake are fishermen and hunters, and cultivate only enough land for their own wants. The oil-bearing palm is everywhere, and the nuts form one of the chief articles of food. The people on the Mfini make great quantities of salt, which they exchange for meat and fish. Great quantities of copal are found, and the forests are one grand tangle of rubber vines, which, if properly worked, would furnish rubber for many years.

There are several small islands in the lake, but they are uninhabited, excepting in the fishing season, which lasts three months. Fish abound, and vary in size from 75 pounds down to the small minnow, which is greatly esteemed.

The money to be used in trade with the natives is as follows: Small white and blue round beads, small cowrie, checked cotton cloth and stripes, brass rods in small quantities, large and small bells, tin plates, and looking glasses. Red saved list goes very well, as does also the American sheeting commonly known throughout the whole of Central Africa as "Merikani."

So far as I have seen, the natives, with the exception of the M'Panza tribe, are peaceably inclined, and desire the establishment of factories.

Lake Leopold is healthy, the two agents of the Société Anonyme Belge, who had been there a year, having had very little fever. A cool breeze is nearly always blowing over the lake, and altogether it seems an ideal spot, if one could imagine such a place in Central Africa.

After leaving the lake, we entered the Lukenye River and steamed to the east for twenty-three days. The first four days we constantly passed villages on both banks, stopping frequently to buy provisions and ivory. Ivory seems to be abundant, but the natives only brought us down the smaller pieces, among them being a great number of ivory pestles for beating the manioc root into powder. The pieces brought weighed from 2 to 12 pounds and cost only a few large beads each. After the fifth day in the river we did not see a single village on the banks, they being 4 to 5 miles back, but natives came down to hail the steamer and call her in. They seemed to know of our approach, and we found out afterwards that they telegraphed, by means of drums, from one village to another, so they knew we were coming one day ahead of our arrival.

The forest comes down to the river banks, and, in many places, is thick and almost impenetrable. Rubber vines, some 10 inches in diameter, twist

and twine in every direction. There are many elephant trails, and there must be a great deal of ivory back in the interior, which must have many fertile plains. The people very rarely use boats, those we saw being very roughly hewn and most of them falling to pieces.

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BANGALA TO BASOKO.

The Kongo River from Bangala to Basoko presents the same general appearance as from Bolobo to Bangala. There are thousands of islands, many of them 8 to 10 miles long and 5 miles broad and inhabited by members of the different tribes from the mainland, who make their permanent home on them and spend much of their time in fishing.

These villages are usually large—1,500 to 2,000 people—and the natives as a rule are savage and warlike.

There is only one place where an elevation in the land occurs, and that is at Upoto, on the north bank. This range of hills is about 250 feet in height. They do not extend more than a few miles back in the interior.

At Upoto there is magnificent coffee land, and the Kongo Free State intends establishing large coffee and cocoa plantations here in a short time. The Belgians and Dutch have trading houses near together, but are not buying very much rubber or ivory, although they say there is any amount of both in the country, the natives having very few wants and not caring to cut rubber.

The forests come down to the river bank and are very dense. There is a great deal of orchilla moss on the trees, which gives them rather a weird appearance. The natives use it for dyeing purposes. Sweet potatoes, yams, and peanuts grow in profusion here, and tomatoes and onions, introduced by the whites, thrive wonderfully.

The river at Upoto is 12 miles broad, but it widens to 45 miles at Yambinga, 50 miles further up.

The women belonging to the tribes from Upoto to Malema wear nothing excepting strings of small beads around their waists.

All the villages are stockaded, with watch towers at each end and in the the middle, in order to keep a careful watch for the tribes from the bush attacking them.

The State has small posts all along the river front from Bangala to Basoko. There are usually a corporal and two soldiers in each post, and these serve to keep peace and order in their districts. Each district must pay a tax of so many kilograms of rubber, goats, fowls, and yams each week to the corporal, who forwards them to the commissary of his district every two weeks. At times, this tax is paid in ivory. There is a good deal of internecine warfare going on, but when it reaches too serious a stage the State sends an expedition and settles the row in short order.

At Bumba, the State has a station for the transport of merchandise to Djabbir, in the Ouelle; sometimes the loads go by the caravan road a distance of 130 miles, twenty-nine days' march, but the quickest way is for the

steamer to go up the Itimbiri River to Ibembo, where the loads are transferred to canoes, which take them on to Unguetra, whence they are carried, by road, to Djabbir, three days' march. From Yambinga to Ibembo, by steamer, is three days; from Ibembo to Unguetra, by canoe, seven days; so there is a saving, by this route, of seven days. The natives in the Nimbiri have been inclined to attack the steamers and canoes; but now the State has had an expedition against them, there is no doubt that peace will reign for the next six or eight months.

At Yambinga, the Belgians have a trading house; also, at Ikimi, in the Itimbiri. Ivory and a little rubber is bought at Yambinga, but at Ikimi rubber is bought for almost nothing, the agent telling me that for one stone flint (for a flintlock musket) he bought 4 kilograms (9 pounds) of rubber. Brass rods, beads, and cloth are the currency. The brass rod here is 24 inches long.

Basoko is a fine station, in brick. It is situated in the Aruwimi, a mile above its confluence with the Kongo. The first view one catches of the station is the large rifle tower at the west end, then the regular lines of white-washed houses, and, on either side, large native villages. This station was established five years ago to prevent the Arab slave traders using the Aruwimi as a road from the Unyoro and Mombuttu countries, lying to the west of the Nile and between the Ouelle and Aruwimi rivers.

When the Arabs were driven from Basoko, they established themselves at Yambuya, five days' journey up the Aruwimi. They went overland from here to Stanley Falls.

The State keeps here 6 officers and a force of 500 soldiers; also three pieces of artillery—3-inch Krupp cannon.

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LUSAMBO.

Lusambo is a large State post about 35 miles from the head waters of navition in the Sankuru. This is an important strategical post, and was established to block the further advance of the Arab outposts to the west. Tippo Tib was already in touch with, and had once visited, Pania Matumbo, a great chief, near Lusambo, and his influence had been so great that this man had adopted the Arab dress and kept his women secluded. Tippo Tib's furthest big post west of Kassongo was at North Gandu, on the Lomami, twelve days' march from Lusambo, under command of Gongo Lutete, a slave, who was hated and feared on account of his many atrocities over a great extent of country. When the Government established itself here, Gongo, at two different times, arrived within a day's march with a force of 3,000 to 4,000 men, but was met and driven back to the Lomami with great loss.

The country is rolling, and most of it is in a beautiful state of cultivation, as the Bakubas and Balubas are a very thrifty and industrious race. Coffee and cotton grow wild. Food is ridicuously cheap, and a small egg cup full of small blue-glass beads, a little larger than pin heads, is sufficient to purchase food for one man for a week. The other currency is copper

crosses, cowries, brass rods, cloth, and blue and white beads. Coffee plantations have been established on the opposite bank and are under the charge of an American negro, who originally emigrated to Liberia. He has planted Liberian coffee, and, his work being well done and in a systematic manner, it gives promise of great success. There is not a prettier sight in Africa than is to be seen from Lusambo, looking across the river at this magnificent green country. The hills at this time of year are covered with a short grass as green as any to be found at home. Small villages nestle amidst the shade of palm trees. Large plantain and banana trees, set out in regular rows, run through the village and form a hedge around it; then enormous plantations of manioc, corn, and sweet potatoes cover the remaining land, and from early morning till late at night the women are engaged in grubbing away to improve their crops.

The natives own a good many cattle, which were originally introduced by the Portuguese half-caste traders, who imported them from Walfisch Bay, in southwest Africa. The price of a good-sized cow is one flintlock gun, valued at, say, $2.50, African price. The white men ride the oxen and find them very comfortable on a long journey. I am very comfortably installed, having a good room which has a "four poster" in it, with a good mattress on which to sleep. My men are housed comfortably, and in a few days I hope to be able to start for Nyangwé, across country, two hundred and odd miles.

A great many of the prisoners taken by Dhanis are here, being put through their drill preparatory to making them soldiers. They are well treated, have good quarters, plenty to eat, and seem perfectly contented. Most of them were originally Arab slaves, and they come from every part of Africa east of the Lomami and south of the Ouelle and Victoria Nyanza. Many have been taught trades by their former masters, and I found excellent blacksmiths, gunsmiths, locksmiths, carpenters, masons, and brickmakers, to say nothing of house servants. From the latter, I have selected three or four boys, who do their work perfectly. The Arabs have inculcated in their minds habits of cleanliness, and the contrast between these men and my former Kongo savages is something extraordinary. The Arab boy has his white shirt and cloth of spotless sheeting, while the Kongo species is satisfied with a strip of dirty cloth a foot wide, covering him in front and behind, with the ends tucked in a string running round the waist. You may present him with fathoms of good cloth and whip him every day for a month for not wearing clean clothes; he takes his punishment with numerous yells, but will not change his cloth, preferring to hide away what has been given him until he finishes his service and returns to his native village, where he can make a grand splurge, taking rank immediately as one of the nabobs of the place. I have seen one of these boys, who had finished three years' service with a white man, go back to his village and sew all his cloth together in one long piece, putting red saved list on the edges, and wear the whole thing draped over himself. This man was wearing at least 200 yards

of cloth and strutted around as if he owned the place, reveling in the fact that he was the most envied man in his tribe.

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THE IMBADDI COUNTRY.

This country is known as the Imbaddi, and is wonderfully rich in agricultural products. Nutmegs, coffee, rice, manioc, sweet potatoes, corn, and peanuts are in abundance, while every little cottager has his few goats, sheep, and fowls. The place is infested with leopards, which are a source of great anxiety to the people, as these beasts do not hesitate to enter the village, day or night, and carry off some one. This is a daily occurrence, I am told.

I have noticed a very peculiar thing among the chiefs in this part of Africa, and that is, they will never eat or drink where they can be observed. I offered Dibué a small cup of gin distilled from palm wine; he excused himself and went into a house, closing the door after him, and drank alone and unobserved. When he came out he handed back the cup, thanking me.

A very good gin is made from palm wine. It is distilled in the ordinary way, and is very strong. The taste is peculiar and, to me, very unpleasant. It seems queer that the negroes on the coast, who are great gin drinkers, have not yet found out how to make their own gin. It was first brought into this country by the Arabs, who distilled a spirituous liquor in all their settlements. Most of the Arabs who come to the interior of Africa leave their abstemious habits behind at Zanzibar.

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KASSONGO.

The country about Kassongo is rolling and covered with villages and plantations, which do not seem to have suffered by the war. To the north, northeast, and southeast is a range of hills which almost rise to the dignity of mountains, and up to their base the country is almost barren of trees, but the hills are covered with forest, and beyond, to the north, is the almost impenetrable forest, which comes down from the Aruwimi. Looking from the town in the evening at 5 o'clock, when the rays of the setting sun cover everything with a golden tinge, the scene is one of surpassing loveliness, and makes it hard to realize that this is in the center of what is commonly supposed to be a land of perpetual darkness. How wrong an idea of Africa we have gotten from recent books of travel, which only go into the desert side of life out here, and never seem able to break away from the fallacy that the sun never shines, or that scenes of homely, peaceful farm life can ever be met with. What a glorious day it has been; rather hot, to be sure, but who minds the heat when traveling through such a country as the Manyema and having a magnificent panorama continually unfolding itself—signs of agricultural wealth on every hand; here enormous rice plantations, acres

upon acres of corn, manioc, sweet potatoes, peanuts, and millet; villages surrounded by magnificent banana and plantain trees, while orange, lime, mango, and papaya trees, introduced many years ago by the first Arab settlers, thrive and bear on all sides at a wonderful rate. Each village has its flocks of goats and sheep, while fowls can be had for almost nothing. The Arabs have introduced cattle, and the State has them corralled, keeping one herd at Nyangwé and the other here. There are over one hundred donkeys, which are extremely useful in traveling. Market is held three times a week, and now, even while the enemy is only a few hours' distant, the native women come in to the number of over 2,000 to supply our wants. The money is the "madiba"—a square of woven palm fiber—and with six of these one man can purchase enough to last him a week. The market people prefer it to cloth, as they say it is more durable, lasts longer, and makes better clothes than what we can give them. This is fortunate, as the stock of cloth is rather low, and we have plenty of "madibas," which are furnished from Lupungu, southeast of Lusambo, and also from the Malela and Imbaddi countries, lying between the Lomami and Lualaba rivers.

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NYANGWÉ MARKET.

The only house left standing of this enormous Arab town (40,000 inhabitants) is the one occupied by Lieutenant Lemery, commanding the post, who received me in a very cordial way and conducted me to a comfortable room. A large market is going on, some 3,000 persons being engaged in it, and the noise from it is awful. This is held three times a week. Women are the only vendors. I saw in this market exposed for sale the following articles: Sweet potatoes, yams, cassava root and flour, corn, millet, bananas, plantains, pineapples, limes, oranges, guavas, mangoes, peanuts, palm nuts, pepper, sugar cane, cucumbers, rubber fruit, honey, melons, leaves of the sweet potato vine (which taste like spinach when cooked); also, cassava leaves, eggs, palm oil, goats, sheep, pigs, fowls, parrots, tobacco, salt, palm wine, beer (from millet), fresh and dried fish, white ants, grasshoppers, dried elephant, deer, buffalo, and hippopotamus meat, baskets, hoes, spearheads, grass cloths and mats, bundles of wood for fuel, tomatoes, redwood, pottery ware, and "cannabis saliva," or wild hemp. I have no doubt but that a few slaves are smuggled in for sale, but as this is strictly prohibited by the State, it has to be done very quietly. Two men, who had murdered three women while on their way to Nyangwé last week, were hung in the market place to-day, and their swaying bodies do not have the slightest effect on the people. Some one has already stolen the cloth from one of the bodies. The money used is the "madiba," made from the fiber of the *Raphia vinifera* palm; iron hoes, manufactured in the Manyema, are also used as money. Salt is also a good article of exchange. This salt comes from the Samba country, a day's journey west of Nyangwé, on the other side of the river. It comes from salt springs and marshes, is quite dark, and as good as any European salt I have ever eaten; when evaporated it turns pure white. It

is held in high esteem by the natives and always commands a high price. Analyzed in Belgium, this salt gave the following results:

	Per cent.
Chloride of sodium	88
Phosphate	1
Silice	10
Sulphates	1
Total	100

That made from burning grass gave the following:

	Per cent.
Chloride of sodium	70
Chloride of potassium	10
Sulphates, silice, and phosphate	20
Total	100

To-night, I amused myself looking over the journals, letters, etc., belonging to the late Emin Pasha, found by Commandant Dhanis when he captured Nyangwé and Kassongo.

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UP AND DOWN THE KONGO.

There is no use reciting the events of this tedious voyage up river. It is only necessary to state that I arrived at Kassongo on the 26th of February (1894), at 10.30 a. m., having made the round trip to Basoko in fifty-seven days. The actual time on the road down was one hundred and eighteen hours fifteen minutes and on the way back two hundred and twenty-one hours thirty-five minutes. Below I give a table which may be of use in the future to other travelers:

Down river.

From—	To—	Time.	
		Hr.	*Min.*
Bena Mussoa	Kassongo	5	15
Kassongo	Lualaba River (Kongo)	3	0
Lualaba (right bank)	M'Kabamba	1	30
M'Kabamba (right bank)	Nyangwé	8	15
Nyangwé (right bank)	First rapids	5	15
Rapids (left bank)	Makoula	8	05
Makoula (right bank)	Bena M'Pandi	2	15
Bena M'Pandi (left bank)	Malonga	6	45
Malonga (right bank)	Piani M'Bula	7	20
Piani M'Bula Island	Fuidi Falahui	10	05
Fuidi Falahui, or Furrari	M'Voundon	10	20
M'Voudoun (left bank)	Kirindu	3	10
Kirindu	Babarindou rapids	5	50
Babarindou (left bank)	Bamanga rapids	2	0
Bamanga (left bank)	Mania Loucoulea	6	50
Mania Loucoulea (right bank)	Lumbila	2	05
Lumbila (left bank)	Stanley Falls	2	0
Stanley Falls (right bank)	Isanghi	14	25
Isanghi (left bank)	Bomanch	9	20
Bomanch (left bank)	Basoko	4	30
Total		118	15

Up river.

From—	To—	Time.
		Hr. Min.
Stanley Falls (right bank)	Lumbila	5 10
Lumbila (left bank)	Mania Loucoulea	7 00
Mania Loucoulea (right bank)	N. Tebbi	5 30
N. Tebbi (right bank)	Bamanga	12 15
To pass rapids (left bank)	To pass rapids	12 00
Bamanga (left bank)	Mulenda	10 15
Mulenda (right bank)	Kirindu	15 05
Kirindu (left bank)	Camp in bush	6 55
Camp in bush (left bank)	Camp in bush	8 30
Camp in bush (left bank)	Eloba (Lowa River)	10 05
Eloba (Lowa River)	Fuidi Falahui	9 15
Fuidi Falahui, or Ferrari	Mohalla	8 55
Mohalla (right bank)	Piani M'Bula	11 45
Piani M'Bula Island	Makoko	9 30
Makoko Island	Malonga	6 25
Malonga (right bank)	Kitingi	10 00
Kitingi Island	Bena M'Pandi	10 50
Bena M'Pandi (left bank)	Makoula	6 50
Makoula (right bank)	Kimpemba	9 15
Kimpemba (left bank)	Bena Loango	7 25
Bena Loango (left bank)	Mwana Kalinge	11 30
Mwana Lalinge (left bank)	Nyangwé	6 45
Nyangwé (right bank)	Mulenda	7 15
Mulenda (right bank)	Mamba	10 10
Mamba (right bank)	Kassongo	3 00
Total		221 35

I have not given in the above table the time from Basoko to Stanley Falls. It usually takes a steamer two days and a loaded canoe four to five days.

There is any amount of food to be had on the road the entire distance, and it is customary for the chiefs of each stopping place to present food to any white man who may come along, and he in return makes a small present.

The heavy forest commences at the first rapids, just below Nyangwé, and continues the whole length of the river on both banks, as far as I went. In this, are to be found mahogany, teak, ebony, rosewood, and a species of cedar. The population is large, and at the present time peaceful. Most of them are cannibals, especially the Bakussu and Bakoma, who not only eat the slain in battle, but buy slaves for that purpose. When I reached Kassongo the war was practically over and a good many of the officers and soldiers had been sent back to Lusambo. Commandant Lothaire and Captain de Wouters had gone on to Lake Tanganyika in chase of Ruma Liza, and had captured Kabambarré on the road. They had also made the junction at Miketo, a few hours' march from the lake, with Commandant Descamps, of the antislavery society, who had his headquarters at Albertville, on the lake. The country was entirely in the hands of the State, and every day caravans of prisoners were arriving and being distributed to different points in the State where they could do the least harm.

I have made up my mind to go south, following the course of the Lualaba to where the Lukugu empties into it, and, ascending that river, try to

reach the Tanganyika by boat. This section of the Kongo, from Kassongo to the Lukugu, is unknown, no white man ever having set his foot in it. I shall start on the 16th.

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AMERICAN NEGROES AND THE KONGO.

In my opinion, the Kongo Free State offers the best advantages possible to any intending negro emigrants from the United States. From conversation with the governor-general and high officials in Brussels, I was led to believe that the State would be willing to offer special inducements to the American negro to settle in the country in the way of a reduction of duty on their imports and exports, assisted transportation to the interior to the points selected for settlement, and a grant of land upon which to commence farming. The Government is just, and I can assure all intending settlers they will receive fair and liberal treatment.

Climate and health.—The climate, of course, is not good, but is as good as in any tropical country situated between the same degrees of latitude. It is far and away healthier than Sierra Leone or Liberia. Dr. Dryepondt gives the following comparative statement showing the deaths per 1,000 in different hot countries of the world:

In the Dutch Indies, from 1819 to 1828, the mortality was 170 per 1,000; in the English army, in India, from 1800 to 1830, 84.6; in Jamaica, from 1820 to 1830, the mortality among the troops and settlers was 121; in Algeria, from 1837 to 1848, 77; in Tunis, in 1881, 61; in the Antilles, 91; in Guiana, in 1855, which is a country similarly situated to the Kongo, 237; in Cochin China, in 1861, 115; in Senegal, 1832–1837, 140; in Tonkin, in 1885, 96. This only refers to the mortality among the troops and white settlers, and these dates have been taken because the above countries at those different times were in the same progressive state as the Kongo is to-day. The average mortality in the Kongo Free State during ten years has been 70 per 1,000.

From meteorological observations taken at Banana, Matadi and Vivi, Leopoldville, and Bangala we get the following data:

Month.	Banana.		Matadi and Vivi.		Leopoldville.		Equatorville.		Bangala.
	Highest.	Lowest.	Highest.	Lowest.	Highest.	Lowest.	Highest.	Lowest.	Highest.
	Deg.	*Deg.*	*Deg.*	*Deg.*	*Deg.*	*Deg.*	*Deg.*	*Deg.*	*Deg.*
January	93.2	80.6	89.6	76	96	73.5	.....	65.5	79
February	90	83	93.2	83	96	82.6	.....	65	82.4
March	93.5	80.6	92	78.9	93.2	82	93.2	.....	81
April	91.4	81	93.2	82.6	96.8	83	93.8	66.2	81
May	92	78.8	92	81	92	82.4	.....	66.2	82.4
June	86.9	73.6	88	72	91.6	77.4	.....	63	82.4
July	82.4	73.4	84	71	86.4	73.5	.....	.....	81
August	80.6	73.4	84.5	69.8	90	77.2	.....	66.2	79
September	84	73.6	88	75.2	95	78.9	.....	64.4	79
October	88	78.8	93	75.2	95	80.4	.....	.....	80.6
November	88	81	97	80	95.5	78.9	.....	66	81
December	89.6	81	90	80.6	94.6	78	.....	66.2	80.6

Rainfall in inches.

Month.	Banana.	Vivi.	Leopold-ville.	Bangala.
	1889-90.	1882-83.	1886.	1891.
January	3.75	3.62	7.32	4.49
February	0.73	1.41	3.5	5.93
March	2.27	5.56	7	6.29
April	2.17	9.09	10	6.13
May	1.51	2	5.23	9.03
June	(*)	(*)	(*)	3.41
July	(*)	(*)	(*)	6.97
August	(*)	(*)	(*)	7.49
September	0.14	(*)	2.79	6.86
October	1.51	0.51	5.12	8.06
November	8.03	11	9.41	1.1
December	3.26	8.93	5.2	(†)

*No rain. †No record.

Rise and fall of the Kongo River at Leopoldville.—January, falling; February, low, commencing to rise; March, at its highest level; April, high; May, falling; June, falling; July, low; August, at its lowest level; September, high, but rising; October, high; November, high; December, high, but commencing to fall.

Exports from the Kongo Free State during the year 1893.

Articles.	Quantity.	Value.	Export duties levied.
	Pounds.		
Peanuts	677	$15.88	5 per cent ad valorem.
Coffee			Do.
Rubber	532,948	186,170.12	10 per cent ad valorem in the Low Kongo.*
Copal	237	49.35	5 per cent ad valorem.
Palm oil	2,845,269	118,524.14	Do.
Ivory	410,912	717,701.38	(†)
Palm kernels	8,962,483	172,975.91	5 per cent ad valorem.
Sesame	24,474	572.80	Do.
Cudbear	4,283	227.43	Do.
Rocou	435	18.54	Do.
Rice	9,985	435.99	Do.
Piassava	1,579	131.41	Do.
Beans	838	23.41	Do.
Corn	4,305	75.16	Do
Wood		869.00	
Total		1,030,290.52	

*Rubber worth 4 francs per kilogram.

†Ten per cent ad valorem on ivory bought in all the territory below Stanley Pool, comprised within a zone extending 50 kilometers (31 miles) on each bank of the Kongo and other navigable rivers from Stanley Pool to such points where the navigation of the Kongo and its affluents are interrupted by falls or rapids. Twenty-five per cent ad valorem on ivory bought in the rest of the Kongo Free State, upon which the duty is collected, based upon the value, as follows: Small pieces of ivory, pitons, etc., worth 10 francs per kilogram; points of a weight inferior to 6 kilograms, worth 16 francs per kilogram; points of a weight superior to 6 kilograms, worth 21 francs per kilogram.

Exports from the Kongo Free State in 1894.

Articles.	Quantity.	Value.
	Pounds.	
Peanuts	22,344	$407.38
Rubber	747,409	284,278.29
Copal	7,501	1,256.73
Palm oil	3,779,776	171,646.31
Ivory	557,103	973,040.38
Palm kernels	11,794,548	257,263.21
Sesame	20,610	476.98
Rocou	990	33.58
Corn	4,245	74.14
Hides	9,344	697.68
Piassava	630	40.60
Wood		1,621.20
Total		1,690,836.48

TAXATION.

*Direct personal taxes.**

Taxes on houses, inclosures, etc., which are not used by the State, are fixed, by the square meter of superficial area, by the year, as follows:

Description.	First class.	Second class.
	Francs.	*Francs.*
Dwelling houses and dependencies, such as offices, kitchens, bathrooms, etc	1.50	1.00
Storehouses and other constructions, open and closed, which do not serve as dwelling houses	1.00	.75
Houses used exclusively for lodging black laborers	.50	.50
Covered sheds, without sides	.50	.50
Courts and inclosures serving as depots for storing merchandise temporarily	.25	.25

Boma and Banana are of the first class and all other places in the State are of the second class.

*Tax on employees and workmen.**

An annual tax is made upon employees and workmen as follows:

	Francs.
For each employee and clerk in office	30
For each native workman or servant	10
For each foreign workman or servant	20

This tax is calculated on the number of agents or workmen who each gives his service permanently or who is employed at least three days per week.

*Annual tax on steamers, etc.**

	Francs.
Steamers carrying 50,000 kilograms or more	1,000
Steamers carrying 20,000 to 50,000 kilograms or more	600
Steamers carrying less than 20,000 kilograms	400
For each steam launch	350
For each sailing boat	200
For each whaleboat or canoe made of iron plates, in which sails can be used	100
For each rowboat or canoe	50

* These taxes are reduced two-thirds during the first five years from February 9, 1891, and from that date they are reduced one-half for five years more, by decree dated February 19, 1891.

Receipts of the Kongo Free State in 1893.

	Francs.
Advance made by Belgian treasury	2,000,000.00
Payment made by the King Sovereign	1,000,000.00
Taxes	5,250.00
Sale of ground, cutting trees, etc	25,103.20
Export taxes, comprising fines, etc	715,098.90
Import taxes, comprising tax on alcohol, etc	480,205.50
Personal and indirect taxes	58,729.70
Tolls on the caravan road	55,370.50
Tax for cutting wood for fuel, etc	12,915.00
Shipments from the Mayombe forest	10,000.00
Post-office	100,060.10
Maritime taxes	42,322.52
Receipt from the courts	15,106.80
Chancellery taxes	11,803.38
Transports and from divers services	202,140.00
Taxes on porters for caravan road	30,658.40
Product of the land, tributes, and taxes paid in products by the natives	1,310,000.00
Total	6,074,764.00

Budget of expenses for 1894.

Expenses.	Amount.	Expenses.	Amount.
DEPARTMENT OF THE INTERIOR.		DEPARTMENT OF THE INTERIOR—continued.	
European service.	*Francs.*	*Agriculture*—Continued.	*Francs.*
Secretary of State	10,000	Personnel salaries	54,760
Personnel of office, salaries	58,800	Maintenance of personnel, purchasing seeds, tools, etc	41,340
General expenses	46,200	*Marine service.*	
African service.		Salaries	208,150
Governor-general and inspectors of the State	100,450	Maintenance of personnel, food, etc:	
Administration Centrale at Boma	4,000	Payable in money	90,850
Administration of districts	296,585	Payable in merchandise	11,063
Maintenance of personnel, food, and other objects:		Purchasing boats	26,708
Payable in money	154,773	Maintenance of boats, steamers, etc. (repairs)	60,500
Payable in merchandise	19,825	*Health service.*	
Instruments of precision, library, etc	15,300	Salaries	90,350
Force publique (or army).		Maintenance of personnel:	
White personnel salaries	647,900	Payable in money	24,353
Black personnel salaries:		Payable in merchandise	3,332
Payable in money	784,649	Medicines, instruments, etc	37,000
Payable in merchandise	458,728	*Public works.*	
Maintenance of personnel, food, etc.:		Buildings and structures:	
Payable in money	461,923	Materials and tools	65,200
Payable in merchandise	488,439	Skilled artisans and others (salaries)	108,450
Transport and expenses of recruiting and repatriating the black soldiers of the force publique	227,314	Maintenance of artisans:	
Purchase of arms, ammunition, etc	341,716	Payable in money	59,775
Uniforms and equipments	146,003	Payable in merchandise	800
Agriculture.		Telegraph and other public works	312,910
Maintenance and development of different herds of cattle, sheep, etc	7,500	*Caravan service.*	
		Payments to porters, food, etc	730,838

Budget of expenses for 1894—Continued.

Expenses.	Amount.
DEPARTMENT OF THE INTERIOR—continued.	
General expenses.	*Francs.*
Different missions, etc	175,500
Expenses of voyage of agents from Africa to Europe	185,000
Freight and insurance	171,000
Unforeseen expenses	25,000
Total	6,788,985
DEPARTMENT OF FINANCES.	
European service.	
Indemnity to Secretary of State	4,000
Personnel salaries	45,000
Expenses of administration	15,500
African service.	
Personnel salaries	150,000
Maintenance of personnel	91,000
Expenses of voyage of agents from Africa to Europe	33,500
General expenses.	
Unforeseen expenses	3,250
Interest on capital	30,000
DEPARTMENT OF FOREIGN AFFAIRS AND JUSTICE.	
European service.	*Francs.*
Indemnity to Secretary of State	4,000
Personnel salaries	30,000
Expenses of administration	5,500
Post-office.	
Transport of mail	10,500
Money-order service	500
Navigation.	
Personnel salaries	26,500
Maintenance of personnel of commissary of marine, food, etc	7,044
Material, etc	9,000
Justice.	
Personnel salaries	73,000
Interpreters and other expenses	2,500
Maintenance of personnel, food, etc	17,060
Subsidies to missionaries	11,200
General expenses.	
Expenses of voyage of agents from Africa to Europe	7,300
For the Bulletin Officiel	1,600
Unforeseen expenses	4,000
Grand total	7,370,939

RECAPITULATION.

	Francs.
Receipts	6,074,764
Expenditures	7,370,939
Excess of expenditures	1,296,175

If we take away the advance of the Belgian treasury of 2,000,000 francs and the 1,000,000 francs advanced by the King, there only remains as actual receipts from the different legitimate sources of revenue 3,074,764 francs.

The one salvation of the Kongo Free State is, in my opinion, annexation by Belgium, or, in case this fails, by some other power which is not only able, but willing, to advance the difference each year between the receipts and expenditures until the country is on a paying basis. I have no doubt but that in a few years this will occur and that the center of Africa will be opened to the world so that its wealth can be sent to the coast as easily as ours is brought from the interior of the United States.

Indomitable will and energy on the part of the officers now working in this far-away country will accomplish the desires of King Leopold II and leave as a monument to this benevolent monarch's memory an undying tribute of love of country and personal devotion.

R. DORSEY MOHUN,

WASHINGTON, D. C., *March 21, 1895.* *Commercial Agent.*

HANGCHOW, THE NEW TREATY PORT OF CHINA.*

I have the honor to transmit a report upon Hangchow—to be opened to foreign commerce according to the treaty with Japan—the capital of the province of Chêkiang, in this consular district (Ningpo), the richest city in China, being the center of the most extensive silk and tea districts in the world. I have taken great pains to make this report as concise as possible, and yet as full as the industries and future prospects of the subject demand.

The new order of things in China will, undoubtedly, be felt to the greatest extent in this district, for, as the North China Daily News, of this date, says—

> The new ports—Soochow and Hangchow—promise to offer even greater facilities than Shanghai for the establishment of filatures, cotton mills, and other manufactories. They are in the center of the silk and cotton [and tea] country. It is quite on the cards that the new inland ports will become the Manchester and Leeds, and Shanghai be only the shipping port.

PRESENT APPEARANCE OF HANGCHOW.

The glowing tributes paid by ancient travelers to Hangchow would lead one to expect a city of magnificence; but seven hundred years have passed since the visit of Marco Polo, and time and man have worked great changes, I regret to say, to the detriment of the city.

The hills are the same, as is the lake, but the river has steadily encroached, until now it passes the city walls. But no longer are the great palaces, the wonderful temples, the gay picnic parties to be seen; the devastating work of the Taiping is still evident on every side, and the magnificent squares and streets are things of the past; nevertheless, Hangchow to-day is, perhaps, the finest city in China.

Hangchow, the capital of the province of Chêkiang, which forms the United States consular district of Ningpo (there are two British consuls in this province, one at Ningpo and the other at Wênchow), is situated in the largest tea and silk district in the world. It is undoubtedly the knowledge of this that influenced the Japanese Government to stipulate that it be opened to foreign trade in the new treaty, and should it be opened in accordance with the terms of that treaty, it will soon be one of the most important centers of trade in the whole East. As it is situated in the consular district which I have the honor to represent, I deem it to be my duty to lay before the Department, and through it before the American merchants, all the information I may have, in order that they may be prepared to take advantage

*This report, which not only deals with the opening up of Hangchow to foreign trade and the results expected to flow therefrom, but covers the industries, trades, habits, and customs of the people of that great city and of the province of Chêkiang, of which it is the capital, would have been published at an earlier date but for the inadequacy of the appropriation for the printing of CONSULAR REPORTS and the necessity for publishing reports of a more current nature. It has been found necessary to omit an interesting description of Hangchow (then called Kinsay) by Marco Polo, in 1298, in order to reduce Consul Fowler's report to the space available for it.

of this new opening for the sale of our manufactures. I shall report upon present conditions, and to more clearly show the great importance of Hangchow to us, it is necessary that I should write of the province of Chêkiang.

THE PROVINCE OF CHÊKIANG.

The province of Chêkiang (of which the city of Hangchow is the capital), in which Ningpo is situated, and forming the consular district of Ningpo, is reported to be the second in wealth of the eighteen provinces that go to make up the vast Empire of China. It covers 39,500 square miles and has an estimated population of 35,000,000 people, more than the combined population of Brazil, Mexico, Colombia, Argentine Republic, Peru, Bolivia, and Venezuela, and while but a single consular district, it embraces a population that is exceeded in numbers only by that of the British Empire, United States, Russia, France and her colonies, Germany, Austria-Hungary, and Japan. This comparison readily shows what a vast field is here to be exploited by the foreign merchant. The American merchant is ever ready to explore new fields and find new markets for his wares, but here is a market that is simply neglected; not a single effort is made to open it, and yet where else can he, all things considered, find a more profitable field for his wares?

Trade papers, societies, and traveling men are constantly on the lookout for an outlet for our merchandise; great schemes are incorporated with a view of bringing the advantages of our goods to the natives in all parts of the world excepting China, and particularly this district. I have yet to see or learn of a single effort being made by our merchants to extend their trade in this vast region. There is not a country in the world with a population of 30,000,000 in which evidence will not be found of the zeal and push of the American merchant. It is true that thirty or forty years ago our merchants paid some attention to this market, but it was only in a desultory manner, and to-day, there is not a single American house or a house doing business with the United States in this district; yet the market is constantly increasing, and the means of getting merchandise here have so improved that there can be no comparison with the past.

Thirty-five years ago, there was not a single line of steamers from the United States to the Orient; to-day, there are three regular lines from the Pacific coast of the United States alone, and all carrying lucrative cargoes. Why do not our merchants at home make an effort to capture the China trade? While this report is devoted to one consular district, the same state of affairs is to be found, more or less, in all the others in China.

The following extract from the Imperial Customs Gazette will enable our exporters, importers, and manufacturers to appreciate the richness and vastness of the country of which Ningpo is the port:

The extent of territory to which Ningpo serves as a port may be roughly estimated as comprising 4 degrees of latitude (27° 30′ to 30° 15′ north) and over 4 of longitude (117° to 120° 15′ east), thus including the province of Chêkiang, and the southeastern departments of the province of Anhui. Kiangsu, the province which bounds Chêkiang on the north,

draws its supply of foreign goods from Shanghai, to which port, in return, it sends its produce for exportation. Communication with Fukien on the south and with Kiangsu and Anhui on the west is rendered extremely difficult by natural obstacles, and the course of trade has sought channels of an easier, though more circuitous, nature. At Changshan, where the three provinces, Anhui, Kiangsu, and Chêkiang are conterminous, a range of hills, mentioned in the narrative of Lord Macartney's Embassy as being "apparently higher than any in Great Britain," puts a barrier to continuous water communication and presents a formidable obstacle to transit.

The rivers of the province take their rise within its boundaries, and although they afford excellent interprovince communication, they offer no facilities for commercial intercourse with neighboring provinces. The chief of these rivers, the Chientang, was formerly known as the Chêkiang, the term Ché, to break, being probably applied to it on account of the great tidal wave—enumerated in a Chinese saying as one of the three wonders of the Empire—which breaks in the estuary into which the river falls.

From the ancient name of this river the province takes its name, and aided by the usual affluents which it receives, the Chientang forms the principal highway between the north of the province and the departments situated in the south and southwest. One of its branches running in a southeasterly direction joins the Tungyang near Lanki, and thence flowing east and south connects the north of the province with the central departments of Kinwha and with departments on the eastern seaboard and the borders of Fukien. Another branch, running south and west affords communication with Küchow and those departments of Anhui which lie east of the Yangtze and south of Ningkwofoo.

The Feiyün, the first of the rivers discharging on the southern coast of the province, rises on the borders of Fukien, and is connected with the Hungyang by an artificial channel running from north to south from Pingyang to Suyan. These and other rivers rising in the highlands to the west and flowing eastward to the sea are connected and interlaced by innumerable canals, which form the district and departmental boundaries, drain the lands in wet seasons and irrigate them in time of drought, render transport easy and inexpensive, and form a most convenient system of intercommunication between the several cities and districts of the province.

The greatest breadth of the tract of land to which Ningpo serves as port is about 290 miles from east to west and its greatest length is about 350 miles from north to south. That part of Chêkiang which lies north of Hangchow draws its supply of foreign goods from the nearer port of Shanghai and belongs geographically and commercially to the province of Kiangsu. The extent of territory thus subtracted from the provinces of which Ningpo is the principal port opened to foreign trade is, however, compensated for by the southeast section of Anhui, which finds a port of outlet and supply at Ningpo.

The census of 1812, as quoted by Dr. Williams, states the population of Chêkiang at 26,256,000, and gives the area of the province as 39,150 square miles. Thus the area of Chêkiang is greater than that of Portugal and about the same as England, without Wales or Scotland. This enormous population is principally agricultural, if, indeed, the cultivation of silk and tea may be considered agricultural pursuits. The silk manufacture of Hangchow is said to give employment to 60,000 persons within the city walls, and Huchow, Kiashing, and the surrounding villages are reported to employ 100,000 more. The manufactures of Shaoshing—fans, soy, and wine—furnish occupation for several thousand, and a considerable percentage of the population of the same city finds employment as clerks in the magistracies and yamens throughout the Empire, though included in the census returns of their native districts.

The fans of Shaoshing, the paper of Yenchou, mentioned by Du Halde as in great esteem and demand, the white insect wax, the vegetable tallow, and the hams of the central prefecture Kinwha, the iron and alum of Wênchow, and the cuttlefish of Chusan archipelago—these and kindred industries furnish employment to considerable numbers. But

still the bulk of the population is engaged in agricultural pursuits, though by no means exclusively in the cultivation of rice.

The variety of crops produced in the great alluvial plains, in which, at the confluence of two rivers, the city of Ningpo stands, is worthy of remark. The whole plain is an expanse of the most careful cultivation. Paddy, oilseeds, cotton, mulberries, flax, indigo, safflower, the "ricinus" or castor-oil plant, the "taro," from which a very fair arrowroot is made, and numerous descriptions of medicines give as great a variety to the scene as could be afforded by diversity of surface.

The neighborhood of Hangchow Bay, though by no means fertile in comparison with the more central districts, shows many instances of mud flats and barren tracts of sand, reclaimed and put under cultivation. This part of the province has suffered much from inundations, and protection has been sought from the inroads of the sea by means of dikes and embankments erected at enormous cost. In some cases successive encroachments upon the shores of the bay are marked by double and even triple dikes, the inner ones serving rather as marks of former aggressions than bulwarks against new attacks.

The mud and silt brought down to the sea by the Chientang in its rapid course of about 160 miles is deposited upon the southern shore of the estuary, and, aided by the deposits swept southward from the mouth of the Yangtze, encroaches upon the bay by a slow process of gradual elevation. Nor is the northern side of the bay exempt from the same process.

Kanpu is mentioned in the early Chinese annals (A. D. 306) as a port of note. It was well known in the Middle Ages as the port of Hangchow, or Kinsay. It is frequently referred to by the early Arab travelers as the port most frequented by them, and the terminus of western trade; and Marco Polo speaks of it, under the name of Gan-pu, as "an extremely fine port, frequented by all the ships which bring merchandise from India." Gan-pu is now a town of no importance. Its harbor is filled by the gradual recession of the sea. Its sole trade is in firewood and salt. It has been succeeded as the port of the provincial capital by Ch'ap'u, some 20 miles to eastward. But, though the encroachments upon the sea appear to be constant and unceasing, and though the desolating inundations which form historical landmarks in the province occur less frequently and are less terrible in their results than formerly, still, the elevation of the shores and the multiplication of the dikes do not entirely free the districts from the fear of floods. Inundations still occur when the "eagre" of the Chien tang is unusually fierce, and when the river itself is swollen by heavy rains and mountain torrents. But these floods are usually merely local, and have no other result than that of causing temporary scarcity, from which the country soon recovers.

The Ningpo, or Yung, River, 30 miles above the city, bears the name of "Yaou" and of "Shun," the two semimythical patriarch emperors of four thousand years ago. Shun, the Cincinnatus of China, called from the fields to reign, is said to have plowed his father's acres with an elephant, not far from the city of Yuyaou, 40 miles west of Ningpo, while 2 or 3 miles outside of the walls of Shaoshing stands the tomb of the Emperor Yu,* the Chinese Noah, who is said to have subdued the deluge four thousand years ago. Yaou and Shun reigned B. C. 2357 and 2287, respectively.

*Confucius and Mencius have held up to all future time the perfect character and virtues of Yaou and Shun. They are two of China's greatest sages. During this period occurred the great deluge in China, which the best authorities concur in considering to be an overflow of the Yellow River, probably when changing its channel. Years were spent in coping with this great disaster, which must have wrought terrible havoc and destruction, and unremitting toil and energy were expended in remedying it. It is about this time that the first Chinese settlers arrived at their future home, namely, B. C. 2200, driving out the earlier settlers into more remote parts of the country, where some of them are now still to be found as aboriginal tribes. (Things Chinese, Dyer Bull, p. 179.)

The southern and southwestern districts, including Taichow, Wênchow, and Kinwha prefectures, are hilly, and traveling must be performed either in chairs or on foot, while the country round Ningpo and Shaoshing is accessible almost anywhere by traveling in a boat by the numerous canals and rivers.

The great Chientang, 15 miles wide at its mouth and nearly 2 abreast the city of Hangchow, is the same which, as the crooked river (Chêkiang), gives its name to the whole province. Its head waters, which flow into the province from the southwest in three main streams, furnish means of communication with eight other provinces by haulovers over part of the bank, sloped for the purpose by masonry or earthwork, and covered with wet and slippery clay, which forms a sluiceway. A boat, to pass from a river to a canal, has a rope passed around the stern, the ends of the rope being wound around a windlass on each side of the sluice; men work the windlass on both sides until the boat has been hauled to the ridge, when it is pushed into the water.

The rivers of China are her glory, and no country can compare with her for natural facilities of inland navigation. The rivers and canals are the roads in this district.*

The hills of Chêkiang, though not so lofty as those of Fukien, are worthy of notice. Native books, I am told, give detailed and glowing descriptions of them, especially of the Sze-Ming-Shan, a mountain range, rising to the west southwest of Ningpo, and its ramifications stretching through the departments Ningpo, Yuyao, Fêngwha, and Ninghai. This range is considered in the books of the Taouist priests as ninth in the order of the thirty-six lofty mountains of China, and no less than two hundred and eighty peaks are numbered in the chain, each having its own name.

The products of this district are of considerable variety, as might be expected in a climate partaking both of the temperate and tropical; but the most important are rice, tea, silk, cotton, wheat, maize, millet, sweet potatoes, turnips, taro, hemp, insect wax, vegetable oils, and tree tallow. The principal manufactures are silk piece goods, silk thread, nankeens, fans, umbrellas (kittysols), rush mats, straw hats, carved and inlaid furniture, silver, or "joss," paper.

Government.—The province is divided into eleven fus or prefectures, one chow or subprefecture, and again into seventy-five hsiens or magisterial districts. The chief ruler of this and the neighboring province of Fukien is the chitai, or viceroy, but being a constant resident of Fuchau (Fukien), this province is naturally left under the sway of the futai, or governor, who resides in Hangchow, the capital of this province. The high civil authorities of this province are: One futai (governor); one shiohtai, or literary commissioner; one imperial commissioner of silk manufactures, who also has charge of the Chêkiang customs affairs; one fantai, or provincial treasurer; one niehtai, or provincial judge; one salt commissioner, and one grain

*See report on "Highways in China," in SPECIAL CONSULAR REPORTS, Streets and Highways, p. 529.

commissioner, all residing in Hangchow. The military officers of this province are: One Tartar general, who resides in Hangchow; one tetai, or commander in chief of land and water forces, residing in Ningpo (as this city is the chief maritime port); two sublieutenant-generals, one with headquarters in Hangchow, the other in Chapoo. The governor is the chief of both civil and military; in fact, he is the supreme ruler of the province, owing obeisance only to the viceroy and the authorities at Peking. There are four taotais, or intendants of circuit, who control the prefects and subprefects, and the prefects in turn control the seventy-five magistrates. The taotais are known by the name of the fu cities (first-class cities) in which the prefect resides, as Hang, Kia, Hu Taotai, or intendant of Hangchow, Kiahsing, and Huchow circuit, residing in Kiahsing; the Ning, Shao, Tai, Taotai (intendant of Ningpo, Shaoshing, and Taichow); the Kinjü, Yen Taotai, or intendant of Kinwha, Ch'uchow, and Yenchow circuit, residing in Ch'üchow; and the Wên, Tsoo, Taotai, or intendant of Wênchow and Tsoochow, residing in Wênchow. Foreigners generally designate the intendant by the city in which that officer resides, as the Ningpo taotai, Wênchow taotai, Ch'üchow taotai, Kiahsing taotai.

The Ning, Shao Tai, Taotai, or Ningpo taotai, has other duties, from the fact that Ningpo is an open or treaty port, and charged with the supervision of customs affairs. He is, therefore, also styled superintendent of customs, and is also the taotai at Wênchow, that being also a treaty port.

According to the official directory of China, issued by order of the board of civil office in Peking, for the autumn season (August, September, and October, 1893), the annual land tax turned into the imperial treasury is 2,914,946 kuping taels* (about $2,900,000); from miscellaneous duties, 10,650 taels; the tribute rice (second quality) from the three prefectures of Hang, Kia, and Hu amounted to 43,765.5 tons of the second quality and 4,715 tons first quality. The amount of money sent from the remaining eight prefectures is fixed at 501,304 kuping taels. This money is sent in lieu of tribute rice and salt taxes to Peking. Money sent to Peking annually from this province, 2,287,346 kuping taels. In August, 1893, there was on deposit with the fantai (treasurer) 687,277 kuping taels. The northern customs' duties, native stations, amounted to 122,664 kuping taels; southern customs, to 26,500 taels; Ningpo customs (including Wênchow), 32,030 taels. These three customs stations are under the general supervision of the imperial commissioner of silk factories at Hangchow.

The prefectural or first-class cities (fu) are Kiahsing, Huchow, Hangchow, Ningpo, Shaoshing, Taichow, Kinwha, Ch'üchow, Yenchow, Wênchow, and Tsoochow. Of these, Ningpo, Wênchow, Taichow, and Hangchow are maritime ports, the first two being open to foreigners. Hangchow, though on the sea, is inaccessible for ships, for reasons that will be given hereafter. Taichow is not open to foreign trade. So, of the coast ports, we have only to treat of Ningpo and Wênchow and the city of Hangchow, which is soon to be opened.

* A kuping tael is worth about $1 in United States currency.

Ningpo.—The port of Ningpo is the principal treaty port of Chêkiang province. The treaty ports of China are so called from having been designated by treaties, entered into between foreign nations on the one part and China on the other, as places where foreign merchants shall be allowed to reside and trade. The first of these treaties was that of 1842, signed at Nanking, and generally called the Nanking treaty. By it, five cities were declared treaty, or open, ports, viz, Canton, Amoy, Fuchau, Shanghai, and Ningpo. The city of Ningpo is situated at the confluence of two small rivers 150 miles from Hangchow, in latitude 29° 55′ north and longitude 123° 22′ east, 12 miles from the sea, on an alluvial flat of extreme fertility, intersected by a vast network of small rivers and canals. The streets are narrow and paved with slabs of stone, and while, in many cases, are difficult to traverse on account of their narrowness and the uncertain footing, they are, nevertheless, a vast improvement upon most cities of China. In fact, it is said that Ningpo is second only to Hangchow in the width and cleanliness of its streets, and Hangchow is credited with being the city of fine streets. In Ningpo, there are main streets so narrow that one can not carry an open umbrella. The city is full of temples, some of them very costly. The city is surrounded by a wall 5 miles in circumference, about 25 feet high, and 20 feet thick. Entrance is afforded by six gates. Ningpo is the chief city of the department, being the headquarters of both civil and military authorities. It lies at the fork of the rivers Yung and Yuyao. The population of the city proper is 300,000 and of the neighboring plain 3,000,000. On the right bank of the river, nearer the sea and connected with the city by a bridge of boats, is the "settlement," or section occupied by foreigners; here are the business houses, godowns, and wharves of the merchants, consulates, and custom-house.

The settlement is policed at the expense of the foreign community; the streets are comparatively clean and are kept in repair by subscriptions. A narrow walk (9 feet wide) runs along the bank of the river (Yung) by the houses of the foreigners. It is here that all shipping by steamers and vessels, other than in small craft, is done; in fact, it might be said that the settlement is one port and the city another. For aught that one can learn from outward signs, the maritime (native) trade of Ningpo City is, I imagine, carried on to-day as it was two hundred years ago. The steamers discharge and load without the mechanical aid that is so familiar a sight on the wharves at home. We see no derricks or lifts of any kind; we hear no panting of engines or buzzing of swiftly moving ropes; we do not see the heavy teams with their great loads of barrels, boxes, and crates rumbling down to the gang plank; there is no hustling; no hoarse shouting and cracking of whips of the teamster; no wheelbarrows or hand cars to dodge—all these signs are conspicuous by their absence. Instead, we find the dock covered by tea chests, boxes of merchandise, and miscellaneous freight, and one by one these packages are carried on board by the hard-working coolie. His method is to tie a rope around the center of the package, run a bamboo

(split) pole under this rope, and two men lift the ends of the pole to their shoulders, the package, suspended between them, being carried on board. As they pass over the plank, another man hands them a tally stick (made of small bamboo). The only noise is made by the "he-ho" of the men as they pass with their burdens.

There is at present no direct trade with foreign countries, all exports for abroad being shipped first to Shanghai, 180 miles to the north, and it is in that market that the Ningpo merchants purchase their foreign goods.

The shipping trade is chiefly represented by two lines of steamers to this port, leaving Shanghai on alternate days. One is a Chinese company (China Merchants' Steam Navigation Company), running the steamship *Kiangteen*, of 1,368 tons, the other the China Navigation Company (Messrs. Butterfield & Swire), an English company, running the *Peking*, of 2,232 tons. Both vessels are on the style of American river steamers; in fact, they are copies of that type of vessel which were first brought out by the famous house of Russell & Co., in the palmy days of American shipping, for the purpose of plying on the inland waters of China. In addition to the *Kiangteen*, the Chinese company dispatches a small steamer twice a month to the southern port of Wênchow, in this district. Occasionally a steamer calls from Hongkong, Japan, or Formosa. In addition to these, is an immense number of native craft.

Lorchas (foreign style bottom, native rig) trade between Ningpo, Chinhai, and the Upper Yangtze, carrying kerosene oil, matches, and other cheap and bulky cargo. This traffic is now entirely under the native flag, although no later than ten years ago it was divided under seven different flags—American, British, German, Danish, Spanish, Siamese, and Chinese.

Ningpo native shipping.—The native shipping (vessels of the old style) is made up of some 800 seagoing junks of local build and ownership, besides which there are annual entries of Fukien junks numbering 100 or more. Of these junks, 70 trade between Ningpo and Fuchau, of which 30 bring poles to Ningpo and return generally in ballast, the poles being lashed to the sides of the junk and piled high above the deck; 20 bring china ware, olives, oranges, paper, etc., from Fuchau and take thither cotton, beans, etc. These junks are of from 40 to 70 tons capacity and make from one to three trips a year.

Junks to the number of 200 are engaged in carrying timber from Fuchau to Chinkiang, Chapu, Fênghua, and Hsiangshan; they make but one trip a year and are laid up at Ningpo in the autumn. Junks to the number of 110 ply between this port and Chinkiang, carrying paper, mats, etc., and bringing back rice, wheat, pigs, cow bones, and china ware. These junks are of from 20 to 40 tons capacity and make from one to six trips a year.

About 300 junks are engaged exclusively in the transportation of rice from Chinkiang to Ningpo, taking no cargo from Ningpo.

A dozen junks are engaged in the trade between this port and Wênchow, taking cargoes of beans, seed cotton, etc., and returning with white alum. They are of 40 to 70 tons capacity and make from one to five trips a year.

Ten junks trade between Ningpo and Taichow; these are Taichow junks, with licenses from that prefecture, and are of from 40 to 60 tons capacity.

Something over 100 junks from the Fukien province enter annually, bringing, principally, sugar, and taking away cotton, beans, and bean cake.

Trade with the northern ports of Niuchwang, Tientsin, and Chefoo is carried on by 80 or 90 junks of from 60 to 200 tons capacity. They are of Ningpo build and ownership. They make one or two trips each year, bringing to Ningpo beans, bean cake, vermicelli, etc., and taking away paper, samshu, bamboos, etc.

The following extract from a report by the commissioner of customs gives some further information relative to junks:

The local junks are all registered at Ningpo or in the neighboring districts of Chinhai and Tinghai, and have license certificates. The larger junks, such as those trading to the north, are called "tan ch'uan," "san pu-hsiang," and "ssû-pu-hsiang." The first named is of an old type, having a square bow, with a round figure painted on the face of it, and an eye on each side. The two latter classes are of a more modern type, having narrower bows and high bulwarks, like horns.

The name "san pu-hsiang," is said to have been applied to the first vessels of the kind built, because they were of a new type, *i. e.*, "not like" any of the three principal kinds of vessels then existing, the phrase being a familiar one as applied in common parlance to strange creatures which are neither "fish, flesh, nor fowl." "Ssû pu-hsiang" became the name of a still further modified type, by a natural extension of this principle of nomenclature. They are not so clumsy as the "tan ch'uan," and can sail much faster. They have iron anchors and chains, and running gear of foreign pattern. The "ssû pu hsiang" are generally larger than the "san-pu-hsiang." These large junks carry crews of 16 to 24 men. The smaller junks, such as those engaged in the Fuchau and Chinkiang trade, are called "tiao ch'uan" (a bird), and "pai-pi-keo" papico (white decked). They carry from 8 to 12 men. Other varieties of boats, used for river work, are the "pai-t'ung tsai" (undecked stone boats); the "pai-kuan ch'uan," named after the place where the type originated, and used for conveying goods to and from the interior on the rivers, creeks, and canals; "wu-p'eng-ch'uan," black-roofed passenger boats; "hsin-pan-ch'uan," mail boats with red roofs; "wu-shan ch'uan," cargo boats, running to Fêng-hua, having straight bow and stern; "hang ch'uan," passenger boats, and "chiou-hua-ch'uan," propelled by oars worked by the feet.

Chinese river boats.—In the mountain districts back of Ningpo, the boats used, when the rivers and rapids are fast, are long, narrow, flat-bottomed affairs, made very light, and with the stem boards rising from 2 to 3 feet, curving outwards, giving the boat the appearance of the Venetian gondola. A rope is attached to this stem board, and one man on the bank—just as often in the shallow stream—pulls the boat up the rapids, while the other stands in the stem guiding it with a pole, and, when the water is very shallow, pushes it over the rolling stones. There are no seats in these boats; in fact, they are mere shells, very light and small. When the rapids are nearly dry, a bamboo raft, 40 feet in length and 4 feet wide, is substituted for these boats. These rafts are made by making two rafts of eight or ten 20-foot poles, and binding them together, end to end. When loaded they are just awash, but as the water is only from 2 to 12 inches deep, there is no danger. Each raft will carry from 600 to 1,000 pounds of cargo.

Foreigners wishing to travel in the country for business or pleasure have a boat with the native-style hull and a long cabin built on it, fitted with bunks, bath, cook rooms, etc. While small, these are comfortable, in comparison with the native passenger boats.

The small foot boats, or "chiou-hua-ch'uan," are called express boats. They are long and very narrow. The passenger is compelled to lie down in the center to avoid capsizing. They are very clean, with an oiled bamboo cover, and with little panels in the sides of the cover, made of translucent horn or shell, to let in the light; the boatman sits in the stern, with one short paddle fastened to his foot, which he works by pushing away from him; the other paddle is worked by hand. He keeps up a steady stroke night and day, without ceasing, until his destination is reached. The distance from Hangchow to Ningpo is covered in from forty-two to forty-four hours. This is the fastest method of traveling known here, hence the boats are called "the express."

Ningpo port regulations.—The port of Ningpo is construed to include any portion of the Yung, or Ningpo, River contained within a line from the northern extremity of the Chinhai promontory to the small island known as the Triangle, or "Pasyen" Island, and the Hoo Tsin Shan, and a second line running from this islet to the northern base of the hill on the eastern side of the mouth of the Yung River, known as "Lookout Hill." The customs regulations are as follows:

(1) The port shall be considered to have been entered by any vessel that has crossed the line supposed to be drawn from the Chaou-pau-shan in the Kinshan at Chinhai.

(2) On entering the port tide waiters will be placed on board.

(3) The limits within which the shipment and discharge of cargo can take place are the foreign cemetery and the bridge of boats. A vessel having once anchored within these limits must not change her position without obtaining permission to do so from the customs.

(4) Vessels must, within forty-eight hours after entering the port, deposit with the consul their papers and manifest. If there be no consul, they must be deposited with the customs.

(5) Manifests must be signed by the masters of vessels, and must contain all particulars—quantity, marks and numbers, etc.—and any changes must be made within twenty-four hours.

(6) Landing and discharging of cargo or ballast can only take place between sunrise and sunset, and can not go on, without special permission, on Sundays and holidays.

(7) When ready to discharge, the consignee must send to the customs an application in Chinese (or English), giving particulars of the goods to be discharged, on which he will be furnished with a permit to remove his consignment from the ship by which imported and place the same on board a cargo boat. The cargo boat must then repair to the customs jetty in order that the goods may be examined and assessed for duty; a customs memorandum will thereupon be issued, which the consignee must take to the Haikwan bank, when, on payment of the duty as noted in the customs memorandum, he will be supplied with a receipt which he must then take to the office of customs, in return for which he will be handed a "duty-paid order," upon which he may remove his consignment from the customs jetty and place it in his godown.

(8) In the case of goods to be shipped, the shipper must send them to the customs jetty for examination, with an application in Chinese (or English) for a permit to ship, containing all necessary particulars, and must, at the same time, hand in the barrier pass, showing that the goods have paid transit dues. The goods will then be examined and customs memorandum

issued, and on production at the office of the bank receipt, a "duty-paid order" will be issued, upon which shipment may take place.

(9) Goods "shut out" must be taken to the customs jetty for examination before being relanded.

(10) Before application is made for the customs clearance, the export manifest must be handed in to the customs.

(11) No transshipment can take place without special written permission.

(12) Drawback and exemption certificates will be issued simultaneously with the permit for the shipment of the goods covered by them, and exemption certificates for goods duty paid at other ports must be presented simultaneously with application for permit to land.

(13) Foreign vessels are prohibited from throwing ballast in the river, under a penalty of 50 taels.

(14) The firing of arms of any kind is strictly prohibited, under a penalty of 50 taels.

(15) Any infringement of the above rules will entail the enforcement of the penalties provided for by the treaty.

The custom-house is open for the transaction of business from 9 a. m. to 4 p. m., Sundays and holidays excepted.

All applications regarding customs business should be addressed to the commissioner of customs.

Vessels arriving at Ningpo will have their berths appointed for them; to rig in flying jib and jib booms, and not to rig them out until clear of the shipping; to top up lower yards; vessels to moor in line and keep a clear junk channel on the east and west sides of the river; vessels' boats towing astern at risk of the vessel; to keep a clear channel; to moor clear of line of buoys.

Ships drawing as much as 18 feet can easily come up to the settlement, and there is good anchorage free from any danger.

There is no reason why ships can not make direct voyages to this port. Years ago this harbor was constantly filled with ships from the Atlantic ports of the United States, but it is years since a ship from the United States has put in here. Three years ago, however, a ship left New York bound direct for Ningpo, but, unfortunately, was wrecked before reaching the coast of China.

Ningpo banks and banking.—The commissioner of customs, in his decennial report, says:

There are twenty-two native banks in Ningpo. They all transact business with Shanghai, Hangchow, Shaoshing, and two of them have dealing also with Wênchow. They receive money on current and fixed deposit, make loans on satisfactory security, and issue drafts.

The principal banks are united in a guild, the members of which uphold each other's credit. Banks outside the guild get business by offering better rates, but their credit is not so good. The guild fixes and publishes each day a rate of interest for daily loans called "yin chê," or "yang chê," which is from 10 to 30 cents a day per $1,000. Interest on current deposits is calculated daily at this rate, less 5 cents, while interest on overdrafts is charged at this rate, plus 5 cents. Loans are made for periods of three months, or six months, in which case interest is calculated at a monthly rate, which varies from $5 to $7 per $1,000, according to the circumstances of the business. In no case is a longer period than six months fixed. The borrower gives a promisory note for the amount borrowed, with interest, and if unable to meet the note at the end of six months, he may be allowed to pay interest and renew the note for another period at a higher rate of interest.

During the first three months of the Chinese year, no interest is paid on deposits, and loans are made at the very low rate of 7½ cents a day per $1,000.

On fixed deposits for one year, interest is paid at the rate of 6 or 7 per cent per annum.

Loans are sometimes made on the security of merchandise, but generally a good reputation and the indorsement (or written guaranty in case of large loans) of a merchant, or banker, of good character and standing are sufficient to secure a loan.

The charge for remittance to Shanghai is about 3 mace per 1,000 taels.

The average bank has a capital of from $30,000 to $40,000.

Foreigners use the native banks to some extent, but the greater part of their banking is done in Shanghai, where there are excellent facilities for all kinds of banking business. Banking with the natives is attended with some risk, owing to the character of their notes, being in Chinese, and on poor quality of paper, thin and easily destroyed.

Ningpo currency.—In this district, the following terms of money are used: Copper cash, about 1,080=$1 (Mexican); Mexican dollars; subsidiary coins of Hongkong (English), Canton (Chinese), Straits Settlements, Europe, and America; Shanghai taels (a fictitious currency, there being no such coin in existence), merely representing a local value (the Mexican being the current coin), and fluctuates from $1.29 to $1.43 (Mexican); the Haikwan tael (another fiction), being really a weight used in the customs, and averages the value of $1.51 (Mexican); the kuping tael—the Government tael—used for the collection of land revenue and internal taxes, averages about $1.44 (Mexican).

China presents the curious spectacle of an Empire without a gold or silver currency. For centuries, with but slight exceptions, the medium of exchange has been the cash, or small coin of the size of a nickel 5-cent piece, but only a half or third as thick, with a square hole in the center for convenience in stringing. The medium at many ports is the local tael, while some merchants here make calculations on the basis of a Ningpo tael. The majority either calculate upon the Shanghai tael or the Mexican dollar, while in reality there is only one silver coin in commerce—the Mexican dollar. There is no such coin as a tael.

When the native buyer goes into the interior, he either pays for his purchases in the small copper cash (coin) or the Mexican dollar; when he exports his purchase, even to a neighboring port in China, he pays duty in Haikwan (customs) taels, although there is no such coin. He actually pays the equivalent in Mexican (say $1.57) for each Haikwan tael duty. If the merchandise is sold in Shanghai, it is paid for on the basis of a Shanghai tael in Mexican, at the rate of the day.

Postal facilities.—At this office, a mail is received from the United States and distributed, having been transmitted from Yokohama by any steamer that happens to be bound for Shanghai. As our Government, for some unknown reason, has thus far omitted to include China in any mail contracts, the mail steamers only deliver the United States mails at Yokohama and Hongkong. This arrangement is a constant source of delay and, consequently, irritating to all, as it often happens that our mails are kept in Japan from ten days to two weeks, and yet Yokohama is but five days' journey distant. We are dependent upon the courtesy of the passing steamers; often these steamers belong to lines that are rivals of the Pacific Mail. The

Government might remedy this evil and contract for the delivery of the mails for China in China (Shanghai). At Shanghai, there is a regular United States postal agency and a supply of United States postage stamps is constantly kept for sale, but our facilities are very poor as compared with those of other nations in China. A United States postage stamp will only carry a letter to the United States or beyond. Although the letter passes through Japan, we can not send mail to Japan with United States stamps. We have no money-order offices, while the British consulate here issues money orders for all places in the Postal Union, the United States included, and its stamps (Hongkong) will carry letters to any place in the Postal Union (including Japan). The same is the case with the French and German offices in Shanghai.

China has no postal system, but the customs, under the control of foreigners, have a system of their own by which letters can be sent to any of the treaty ports and Peking, for which they issue a stamp of their own.

The natives send their mail from one place to another in China by means of postal expresses, or hongs. In Ningpo, there are fifteen native postal hongs which transmit correspondence and parcels to and from Shanghai and other places. The service rendered by them is excellent, but the cost is somewhat excessive. Letters and parcels to be sent away and called for at the principal offices, shops, and business houses in Ningpo and those arriving are delivered at their addresses. The mail bags for Shanghai or places beyond are sent to and from Shanghai by the daily steamer in charge of a messenger employed at the joint expense of the postal hongs. A contract is made with the steamer companies to carry the mails for a fixed daily charge. Mail matter destined for places beyond Shanghai is committed to the care of corresponding postal hongs there, which forward it to its destination.

Native boats are employed for carrying mail matter to places in the interior of the province. The postage for a letter and a small parcel to Shanghai is 70 cash; to Hankow, 100 cash; to Tientsin, 200 cash; to Peking, 400 cash. By native boat to Shaoshing, the charge is 30 cash, and to Hangchow, 40 cash.

Official or mercantile establishments having extensive correspondence make agreements with the postal hongs to carry their mails for a fixed sum per month, or obtain reduced rates of postage. Postage may be paid either by the sender or the recipient of letters, except for correspondence intended for the interior, in which case one-half is paid by the sender and the other half collected from the recipient upon delivery of the letter or parcel, the sender writing upon the cover the amount paid and the amount due.

Traveling.—The only means of traveling is by boats on the rivers and canals, by chairs, or on foot. The walks (roads) are mere paths not more than 4 feet wide on the average.

Telegraphs.—Ningpo is connected by telegraph with the outside world. Besides a short line running down to the forts at Chinhai, the entrance of

the harbor, there is a line running to Yuyao, to Shaoshing (where it connects with the main line), Kiahsing, Hangchow, Soochow to Shanghai. At Shaoshing the main line runs down through the province to Fuchau via Lauchee, Puching, Kienning, Yinping. The cost of a message to Shanghai is at the rate of 26 cents (Mexican) per word, counting address and signature.

Electric lights.—With the exception of the electric lights on the steamers, and a telephone recently erected connecting the taotai's yamên (offices) with the forts at Chinhai, no other use is made of electricity in this district.

Climate.—The climate of this district ranges from tropical to semitropical. Sometimes, the winters are quite cold in Ningpo, and snow falls occasionally. The heat in midsummer is intense. September and October are the most unhealthful months, when cholera is prevalent to a great extent, although in the winter smallpox often spreads to an alarming degree. During the winter of 1893–94 there were between 75,000 and 100,000 deaths from this vile disease in the city of Hangchow, and in Ningpo between 10,000 and 12,000, but aside from fevers and the usual complaints caused by a hot, damp climate, foreigners do not suffer, especially if they go away occasionally to recuperate. The statistics of this office, which, of course, refer only to American citizens, show that during the past ten years there have been seven deaths, of which six were from cholera.

During the summer of 1887, there were 20,000 deaths from cholera in this vicinity, necessitating the erection, a short distance outside of the settlements, of a mortuary 450 feet long, 300 feet wide, and 40 feet high for the reception of the dead.

Internal trade.—In sending foreign merchandise into the country or bringing native produce to the coast, in order to escape the heavy exactions of the likin, or octroi, duty, it is the practice to apply at the foreign customs for a transit pass. This pass describes the merchandise, marks, and quantity, and upon payment of one fee at the customs it is freed from all further exactions. To send merchandise into the interior, the pass is applied for directly to the customs; to bring merchandise from the interior, it is necessary to apply for the pass to the superintendent of customs (taotai) through the consul. The inward pass is issued by the customs, to either the foreigner or the native, to cover foreign merchandise only; the outward pass is issued only to foreigners and to cover merchandise purchased in the interior for export.

The rules for the issue and surrender of the transit passes outward, at this point, provide:

(1) Transit passes for the purchase of goods in the Chêkiang province must be used within six months of the date of issue, and goods purchased after the expiration of that period and attempted to be brought down under these passes will be confiscated. In the case of transit passes granted for the purchase of goods in other provinces, the period is extended to one year.

(2) Passes not used for the purchase of goods within the specified time must be returned to the superintendent (taotai), through the consul, for cancellation.

(3) Produce purchased under transit passes within the prescribed time limits is allowed,

if purchased in Chêkiang province, six months, and if purchased in other provinces, one year to reach the barrier (customs station) nearest Ningpo.

Collecting customs duties.—There are at least three systems of collecting duty, viz: The custom-houses at the treaty ports under the suspervision of foreigners in the employ of the Government; by the customs entirely, under the management of the native officials at all the coast ports and over which the so-called foreign customs has no authority; the likin stations, that collect other duties on the goods after landing and when en route for the country.

All merchandise imported pays one full duty at the port of entry. When it is transshipped to another port in China, another half duty, called coast-trade duty, is collected at that port, or when it is sent into the country under transit passes a transit duty is collected equal to half duty.

Native produce brought down from the interior under transit passes pays half duty at the port of export and an additional full export duty on leaving the port, no matter what its destination, whether for a port in China or a foreign port.

Imagine a merchant in Washington purchasing goods in Chicago and having to stop at every city all the way to Washington and have his wares examined and assessed for duty; or shipping goods to Norfolk and have to pay export duty, and then the Norfolk merchant having to get a pass to send the goods on to Richmond and to pay likin or half duty!

It is the likin that has throttled trade. The likin is the greatest hindrance to the cotton trade, as well as to other foreign trades; remove that obstacle and we have before us the greatest market in the world.

Chinese guilds as they affect trade.—Next to the likin, and closely associated with it, as regards foreign trade, is the guild. Whenever a Chinaman leaves his birthplace, he joins the guild composed of his fellow provincials in the place he happens to be. For instance, all the natives of the Fukien province residing here, for whatever purpose, belong to the Fukien guild, and all natives of this province residing in Fuchau belong to the Chêkiang guild. These guilds are for self-protection, and each trade or occupation has its own guild—the bankers, fishermen, lorcha, oil, foreign-goods guilds, etc. It is naturally with the last that we are interested, for, to a greater or less extent, does it influence our trade.

S. T. Layson, who has made a study of this subject, gives the following lucid information concerning the trade guilds of Ningpo:

The great gates of each guild are opened twice a year for the discussion of ordinary business, in the spring and in the autumn months, the days chosen for the functions being the anniversaries of the birth and death of Kuanti, the Chinese Mars. On such occasions a sum is generally taken out of the guild coffers for the purpose of entertaining the members and visiting brethren from neighboring cities at a banquet, accompanied by theatricals held in the grand hall of the institution. As a rule, if any of the members of a guild should happen to have litigation with an outsider, there is a sum of money held in reserve for such purpose which the members have a right to draw upon in order to prosecute such cases at the yamêns. If the outsider be also a member of a guild, the usual method is to ask the officers

of their respective guilds to arbitrate the case. If this fails, then it becomes a question of wealth and influence, for to the guild that disburses the most money and carries with it the most influence is given the verdict. Members having disputes among themselves have them settled at a convocation of the guild.

There are two kinds of guilds, with perhaps a third. These are the "Kung so," or guild proper, representing a body of merchants or craftsmen of the higher order, and the "Huikuan" (Assembly Hall), which represents the stranger's guild, that is to say, people coming from a distance to trade must have a place of meeting, and it naturally follows that when the members of an adjoining province who come to trade in a certain town and find themselves rich enough to build a Huikuan, this is done at once. It is a well-known fact that the Chinese have a stubborn wish to be buried in their native town, and decidedly object to become wandering and homeless spirits when they die in a strange town. Although they might have their wives and families down to the third generation with them at the time, the wish to have their bones in the cemetery of their native village or town is paramount with them. Hence the first care of a community of strangers, doing business in a neighboring city, is to build a Huikuan, the elected officers of which are bound to look after the coffins and bones of their fellow provincials, and to transport them to their native towns. To each Huikuan there is attached a mortuary where such coffins are deposited, sometimes amounting, as in the case of the Ningpo Huikuan, or "joss house," as it is usually called by foreigners, to nearly 2,000 at a time. When these become too many, a notification is generally sent to the depositing families to take measures to transport their coffins to their native homes, but if the persons applied to are too indigent to do so, it becomes the duty of the Huikuan to transport the coffins at the expense of the public treasury.

To quote again an incident from the above-named guild: The Ningpo Huikuan has grown larger and larger in course of years, so that in point of influence it has become a formidable factor in the commonwealth of our model settlement. Every Ningpo man in Shanghai considers he has a right to the protection of his Huikuan, whether he has paid his fees or not, and as there can not be less than 30,000 men, women, and children in Shanghai who hail from this neighboring city, one can fancy the passions that could be aroused in an emergency—for the Ningpo men are a passionate race—as witness the émeute of Ningpo men, which happened about eighteen years ago on the French side of the Yang-King-pang, when the French municipality tried to open a roadway through the grounds adjoining the Ningpo "joss house," or Huikuan, to connect with the Arsenal Road. The Ningpo men got what they called their rights, but with the loss of a few lives. In dealing, therefore, with the question of guilds in China and Shanghai, and the treaty ports especially, diplomats and consuls have a very grave matter on their hands, which should always require considerable tact and diplomacy; for, to say the least, guilds are as amenable to reason as any of the bodies corporate in this restricted world of ours.

What can pertinently be called a third kind of guild, are those belonging to the handicraft trades. They are very similar in functions and institutions to the trade unions in England. As a rule, an apprentice to a handicraft has to serve for five years to learn his trade, after which he has to give two years' work free of charge to his master. An apprentice on beginning his time must first pay a sum of money, say, from $20 to $30 to his master for his board, and seven years from that time he will be allowed to "hang up his own signboard." Any infringement of this rule will bring upon him the wrath of the entire guild, followed, perhaps, by utter ruin or death. He can not go to a neighboring town to work, because there the same rule obtains, and not being able to show a certificate or letter of recommendation from his master's guild he will not be allowed to work on his own account. Again, in such guilds there is always a sum held in reserve to support members on a strike, for strikes are an institution not wholly belonging to the European and American continents. Feeling their inferiority in social life, these handicraft guilds are, perhaps, more clannish and closely associated than the bigger and more influential merchants' guilds, and for this reason, they

might be said to wield as much power as their coguilds in the municipal machinery of every town.

In my report on cotton and cotton manufactures, transmitted to the Department, for the use of the Senate Committee on Agriculture, on January 1, 1893, I wrote as follows:

The piece-goods business is altogether in the hands of the Chinese, who constitute a guild, which, for several years, has enjoyed the benefit of a special arrangement with the likin-tax officials of so favorable a nature that no one not a member of the guild (and foreigners are not members) can compete in the trade. The guild pays to the likin office monthly the sum of 1,000 strings of cash (say, 585 taels) as a commutation for all import likin on cottons and similarly 125 Haikwan taels as commutation on woolens. These payments, it should be observed, are required of all cotton and woolens, whether they go into consumption in Ningpo or are sent into the interior to be disposed of.

If the goods are sent into the interior, they go under transit pass issued by the customs to the guild's representatives. Arrived at their destination in the interior, the goods are liable for local likin, called "low chuan;" this, however, the guild has also commuted, having agreed to pay as a lump sum for both cotton and woolens 1,050 strings of cash (614 Haikwan taels) per month.

In the piece-goods business, the foreigners can not compete with the natives, not alone because the natives are combined as they are "to keep him out, but also because he can not commute (as the members of the guild can do) the inland likin. The import likin he might pay, the transit pass he might take out, but his goods once arrived at their destination inland and disposed of to a native would be liable to unknown taxation, if not even to a fine."

That the guilds and likin office work in harmony as against the foreigners, the following from my report on "Kerosene-oil trade," in CONSULAR REPORTS No. 145 (October, 1892), p. 282, will show:

The oil trade of Ningpo is entirely in the hands of the natives. They have a guild that is all-powerful. Whatever that guild says is law. If the guild says "sell at such a price" woe betide the one who disobeys that order. Should a foreigner undertake to sell oil he would soon be forced to terms, *i. e.*, forced to give it up. I can give instances of this power that have come to my own attention. To show how fertile they are in resources, I mention a case that occurred last summer. An American house here bought a large quantity of oil (Devoe's), a place was set apart away from any dwellings, in accordance with local regulations, for storage. The likin officials were satisfied, although really, the oil having paid import duty, they had nothing to do with it until it was about going into the interior, when these officials would exact another duty, or likin. When the oil had all been stored, suddenly they turned round and demanded that it should be stored somewhere else, claiming that it was too far from the likin office. The firm referred to had an empty godown (storehouse) in the settlement back of the likin office and alongside of the native bank. When the oil was nicely stored in this godown (under the direction of the likin office), which was built entirely of stone, separated from all other buildings by an alleyway, had no windows and only one door, the bank insisted that the oil should be taken away, as it was dangerous. At this stage of the case I was appealed to. I at once suspected the oil guild, and upon investigation I learned that the guild, alarmed at the success of the American, instigated the likin office to order the oil put somewhere else, they, of course, having seen that it could be easily shipped upcountry from where it was stored at first on the banks of a river. The place it was removed to was difficult of access and off the line of native trade. The guild expected that the American would "give in," but he quietly moved to where they wanted him to. That was too much for them; therefore, they got the bank (Chinese) to fight against the American, but I would not listen to a change, and they, seeing that they had been caught, let the matter drop. These changes had cost the merchant 4 cents on every case, and his

profits were thus reduced to only a cent or so a case; another change and he would have lost on the deal.

I mention this to show under what embarrassment foreigners do business in an "outport" of China. The early arrivals in China did business through the co-hongs of Canton; but that was stopped by treaty, and the treaties stipulated that foreigners would be allowed to carry on business at any of the ports. The guilds were not reckoned with. To-day no foreigner would dare to antagonize a guild if he hopes to succeed in China. The likin officials and the guilds direct the whole trade of China. If a guild wishes to raise money for charities—for sufferers by floods, for instance—they go to the foreign merchant in the same line of business. If the piece-goods guild wishes to raise money for flood sufferers they send to the foreign piece-goods importers, and every one of them subscribes a large sum.

To-day the kerosene oil is in the hands of the Chinese about as soon as it lands, and the whole trade is controlled from one center.

Canals and travel.—The whole country is intersected with canals; in fact, they are the main arteries of travel. These canals pass through the towns and villages, and are crowded with boats of every description. The canals are the relics of bygone days, and at the time of their completion, must have been grand undertakings, for to-day, after the lapse of centuries, they still answer admirably the purpose for which they were constructed and retain much of their former magnitude.

Foreigners in Ningpo district.—In this district, there are about 500 foreigners, nearly all of whom are engaged in missionary work. There are 70 Americans located at Ningpo, Shaoshing, Kinwha, Kiahsing, Hangchow, Ninghai, and Nanzing. In the district, there are about 9,000 Catholic converts and 3,000 Protestant converts.

Products and manufactures.—The Ningpo people are chiefly engaged in the cultivation of rice, wheat, and cotton, the manufacture of silk, straw hats, mats, and green tea for the foreign market, and in fishing. This consular district leads all China in its production of silk, tea (green), and cotton. As a fishing port, Ningpo is to China what Gloucester is to the United States. The principal articles of export are green tea, medicines, raw cotton, cuttlefish, silk piece goods, rush hats, paper fans, and ground-nut oil.

Tea trade.—Green tea makes up for nearly two-thirds of the value of the export trade. The exportation of this commodity during the past ten years was:

Year.	Quantity.		Value.		Average sight exchange on New York.
	*Piculs.**	*Pounds.*	*Hk. taels.*		
1885	166,604	22,213,866	4,102,871	$4,923,445	1.20
1886	148,214	19,761,866	3,507,489	4,279,136	1.22
1887	134,017	17,868,933	3,155,994	3,781,192	1.20
1888	156,997	22,932,933	4,066,931	4,679,706	1.15
1889	157,080	20,944,333	3,681,110	4,233,276	1.15
1890	151,573	22,209,733	3,183,409	4,042,929	1.27
1891	159,283	21,237,733	3,124,263	3,749,115	1.20
1892	162,493	21,665,733	3,216,020	3,441,141	1.07
1893	183,775	24,503,333	3,927,926	3,779,809	.96
1894	160,432	21,390,933	3,529,495	2,717,711	.77

* 1 picul=133⅓ pounds.

Nearly all of this tea goes to the United States via Shanghai; seven-tenths of it is shipped direct, and the balance to London for New York, only about one-tenth remaining in England. These teas are known in the United States as gunpowder and hyson.

PREPARATION OF GUNPOWDER AND HYSON TEAS.*

In China, tea is prepared entirely by the natives; in Japan, it is prepared under the direction of foreigners; in India, it is planted, cultivated, and sent to market entirely under foreign supervision. The tea of China to-day is prepared as it was two centuries ago; in Japan, improvements are being constantly made; and in India, the cultivation of tea is an art, conducted under scientific methods and modern machinery, and is fast crowding China teas to the wall; and so long as the native farmer adheres to his primeval methods, he can not expect to compete with India or Japan.

India teas are strong, and, therefore, like China black teas, find their best market in England. * * *

Green tea is marketed in Shanghai under various names, "moyune," "teenkai," "Shanghai packed," "fychow," and "pingsuey." These names are derived from the names of the prefecture or locality in which the tea is grown. The first-named districts are not far from the prefectural city of Fychow and the town of Teenkai. The teas described by merchants as teenkais and fychows are from the same place, these two names being technical only, and used to denote two qualities of make, the fychow being superior to the teenkai. (The teenkai is now no longer exported.)

Fychow and Teenkai are very near each other, and comprise a section of country lying partly in this province (Chêkiang) and partly in Anhui, between the thirtieth and thirty-first parallels of north latitude. The fychow teas come from the Wu-yuan-un district, in the prefecture of Wheychow, of which Fychow is the cantonese pronunciation, at the northwest of the Singli Hills, which form the watershed between the two provinces.

Pingsuey is a Chêkiang growth and gets its name from a small town (Pingsuey) in the neighborhood of the prefectural city of Shaoshing.

The fychow leaf is all manufactured into green tea, the "firing" being done at Fychow principally and at Hientai, on the River Fychow, the workmen being natives of the place. It is owing to Fychow being the chief city of the prefecture that gives its name in general terms to the whole region, including even Moyune. Leaf tea is produced at Tien Dong, near the famous temple of that name, a few hours' travel from this office. In 1856, Dr. McCartney, then United States consul at this port, stated in a report to the United States commissioner, Mr. Peter Parker, that all green tea went overland to Shanghai, and he set forth the advantages that would accrue if the tea could be brought down to Ningpo and shipped here. In 1866, owing to several causes, the route was changed, and all the Fychow and Pingsuey teas now pass through this port.

From the tea districts of Anhui to Yihchia on the Tient'ong, teas have the advantage of a favorable and rapid current. From Yihchia, they may travel by canal to Shaoshing, or they may proceed via Hangchow to Shanghai on inland waters, not being troubled by tides or portages. Teas going by the latter route are subjected to a tax of 1 tael per picul, exclusive of the likin (war tax), while teas coming to Ningpo pay no additional tax whatever. This difference in favor of Ningpo was prompted by a desire to make the Fychow teas that pass through Chêkiang province en route to Shanghai, and contributed nothing to the provincial treasury, bear a share in the expense for the maintenance and repairs of the Hangchow dikes, a very heavy burden, which this province had hitherto borne alone.

It was therefore decided that Anhui teas should help to pay these expenses, either directly, by paying the dike tax at Hangchow, or indirectly, if they chose the Ningpo route, by paying

* From a report (No. 85, March 1, 1892), on "Tea and its cultivation," by Consul Fowler, transmitted to the Department of Agriculture.

the export duty at the Ningpo custom-house. The only fear was that the tea men might devise some other route and thus avoid this extra duty; but Anhui being without an open port, and Kiukiang too far off, the teas found a natural outlet at this port. Aside from the saving of taxes, Ningpo offers another advantage in cheaper storage. Tea sent to Shanghai direct must be stored, until sold, in godowns, the result of which makes an appreciable addition to its cost. The saving effected by storing in Ningpo at a nominal charge until it can be sold by muster in Shanghai has also influenced tea men in favor of this port.

While the teas are stored in Ningpo, merchants in Shanghai have no reliable information concerning stock on hand, chops expected, sales effected, etc., and, naturally, it is an object to keep Shanghai merchants ignorant of the state of affairs in order that the Ningpo dealer may realize to the best advantage.

The manufactured leaf is brought down from Teen Kai by rafts or very small boats. From Ken Whan, near Moyune, requires a land portage of 10 miles. Arrived at Sing-ling, the tea is carried by transport boats the rest of the way to Teen Kai; from Teen Kai to Yih Chia, near Hangchow, the journey is made without change of boat. At Yih Chia it is carried over to the Shaoshing Canal, and on this canal it is conveyed to the Taingo River, carried in wheelbarrows a short distance to a ferry boat, ferried over the river to the town of Pah Kwan, placed in boats in the canal, which convey it to the Yuyao branch of the Yung River; thence to Ningpo it is conveyed in four boats, and subject to three short portages while en route to this port.

The best tea exported comes from a district called Kweichee, in the prefecture of Shaoshing. The celebrated town of Pingsuey is also situated in this district. Owing to its extended area (about 40 square miles), the quantity produced exceeds that of any other tea-producing district in this province. * * *

When the proper division as to quality has been made, each kind is separately subjected to a final firing, when indigo and soapstone powder are employed to impart the requisite color and luster. The teas are now ready to be packed in chests for export. The finer grades go under the name of gunpowder, which is divided into seven or eight grades in quality; the inferior leaves go to make up hyson of different kinds. * * * It costs in duties and likin taxes 3.234 Haikwan taels to export 133⅓ pounds of Pingsuey tea and 3.243 Haikwan taels to export the same amount of Fychow tea. A foreigner would have to pay export duty of 2.5 taels; likin, one-half export duty, 1.25 or 3.75 Haikwan taels. It is therefore apparent that no foreigner hopes to compete with the native in bringing tea to the coast.

The tea that is exported from China is but an insignificant amount in comparison with what is consumed in this vast Empire. The teacup is to be found everywhere—by the side of the mandarin in his yamên (when the act of putting the cup to the lips is the signal that the audience is finished), and it is the companion of the coolie.

The Chinese being the greatest consumers, then, it is not to be wondered at that the Empire makes no effort to extend its market abroad. * * * For carrying all this tea—22,993 tons (cubic measurement)—to Shanghai, three steamship companies received, after all deductions, $15,520.50 (Mexican). Had the tea been shipped direct from this port abroad—it nearly all goes to the United States via Shanghai—this amount would have been saved, as well as the extra handling consequent upon its transshipment, the brokerage, storage, commissions, etc., and the municipal tax of Shanghai entailed by the present methods of shipping it to Shanghai, instead of the foreign country direct.

Ningpo harbor offers no impediments to foreign shipping. In fact, thirty years ago, it was the custom to load direct from this port, and there is no reason why it can not be done now.

A correspondent of the North China Daily News of May 2, 1892, wrote:

It was stated by some Ceylon tea planters who recently visited Shanghai that their gardens could produce tea to sell in London at an average price of 6d. per pound, and give a

fair return at that, a result attained partly by personal superintendence, partly by the use of machinery, partly because the teas went from the gardens "direct" to London. Few merchants doing business in China have any true idea of the number of hands produce of all kinds passes through before it reaches them ready for export; these middlemen all take their little "squeeze," and when, in addition, likin has to be paid, as well as export duty, no wonder China teas can not compete with Ceylon.

The tea men here are constantly inviting ruin by the manner in which they prepare the teas for the American market. I have had occasion several times to impress upon the taotai the necessity of his informing the planters that their adulteration of teas would lead to their rejection at the custom-houses in the United States, but up to the present, so far as I am aware, no change has been made for the better, nor need we expect to see improved methods adopted, so long as the entire business is in the hands of the natives. Now that Hangchow is to be opened for trade, I am quite confident that much of the tea passing through this port for Shanghai will be prepared under foreign supervision and sold in Hangchow and shipped via the Grand Canal to Shanghai for exportation abroad. There certainly seems to be a good field opened there for some enterprising foreigners, and I have no doubt that if tea was grown and cured entirely under the eyes of a foreign superintendent, the venture would meet with success; at all events, we can fully expect to see the Japanese engaged in this business at Hangchow.

The North China Daily News of September 15, 1894, had this to say:

The crusade against "lie" tea by the New York customs inspector is being carried on with more zeal than judgment, and a large quantity of pure infusioned teas have been shut out by him, but they will probably be admitted on arbitration. Some simple test will have to be agreed on which buyers may apply and which will insure their purchases being passed. As matters stand at present, it is not safe to accept orders for even the best pingsueys obtainable on this market. Native tea men ignore the action of the New York inspector and ask a much for their teas as they did before.

The opening of Hangchow to foreign commerce will cause a complete revolution in the tea trade of middle China, and it is to be hoped that our peo ple will be prepared to seize every advantage. I have not a particle of doubt but that machinery and modern methods can be, and will be, introduced in the preparation of teas at Hangchow for the United States market. No greater opportunity for the expansion of our interests has ever before been offered in China. The exportations of green tea via Shanghai to the United States during the year 1894 were: Gunpowder, 12,585,810 pounds; imperial, 191,813 pounds; young hyson, 1,823,456 pounds; hyson, 4,306,064 pounds; twankay, 600 pounds; total, 20,634,063 pounds. There can be but little doubt but that all this tea, or nearly all, will in the future be prepared at Hangchow and shipped from Hangchow to Shanghai for the foreign market. The advantages of Hangchow as a center over Ningpo and Shanghai are too apparent to cast any doubt upon this.

SILK PRODUCTION OF CHÊKIANG.

Only a very small portion of the yield of silk reaches this port; the dealers will not even show samples here. Even the Shaoshing merchants prefer sending their merchandise by the longer and more circuitous route via Hangchow to Shanghai.

Chêkiang is the largest silk-producing district in the world, the great city of Hangchow being the receiving and distributing, and Huchow the manufacturing, center. The district may be said to comprise all that territory lying between Shaoshing and Soochow. Considerable quantities of the silk are taken away in native junks, a little by steamers to Shanghai, but the bulk is sent via the Grand Canal to Shanghai, whence it is shipped to France or the United States; consequently, that portion mentioned in the customs reports of this port is no guide to the immense quantities produced in this district.

Taxes on silk.—The export duty, in Haikwan taels, per picul is: Raw silk, 10; reeled, 5; wild raw, 2.5; refuse, 1; cocoons, 3. This duty is collected whether the merchandise is shipped by steamer or native junk, although in the latter case the duty is not paid, as in the case of the former, at the customs, but at the station or the settlement where likin is collected on opium, tea, and silk. The total duties are about three times the export duty. The taxes on silk are the same whether it is owned by foreigners or Chinese. The taxes are (1) the general likin, (2) likin for export silk, and (3) duty.

The general likin is leviable on all silk at the place of production, and when once it is paid, the silk may be conveyed, without further charge, anywhere within the province, if accompanied by a certificate of such payment. The amount thus levied was fixed years ago at 22 taels per picul, but at present it is usually stated in dollars per bale of 80 catties* net, as follows: War tax (likin), $16; sea-wall tax of Hangchow, $4; tax for Shanghai, paid here, $4; tax for reorganization, $2; total general likin, $26. This is the entire Chêkiang likin which all silk, whether for consumption or for exportation, must pay at once.

Silk for export, besides paying the general likin, as above described, must pay the export likin. This is reckoned in taels per picul and amounts to 5 taels—that is, half the duty prescribed for raw silk in the foreign tariff, when the silk is about to be shipped. Theoretically it is collected as an offset for the loss to the old native custom-houses at Hangchow, Kangchow, Kiangse, Tayning, and Kwantung of revenue formerly derived from silk on its way to the port of Canton. The silk exported from Ningpo is produced in Fuyang, Shaoshing, and districts south of the Hangchow Bay. That from the great silk districts of Hangchow, Keahing, and Huchow finds its way direct to Shanghai. No restrictions are imposed for levies exacted so as to give, as in the case of tea, one route the preference over the other. The provincial taxes, ordinary and extraordinary, are all deducted by the native merchant

* 1 catty=1⅓ pounds.

from the price of the silk as he buys it from the villagers, and he is responsible to the provincial tax office for the full settlement of all legal duties.

Price of raw silk.—The silk is brought in small parcels from actual producers—small farmers, each cultivating his mow or two of land—and is packed in bales by the merchant. The price of raw silk is so high in the producing districts that it seems impossible that it should ever leave any margin of profit to the many people through whose hands it passes. Three or 4 taels a catty is the usual price for silk before payment of duty or expenses of transit. Times have changed since the Abbé Grosier could write that notwithstanding the export of silk, it is so cheap that a complete suit may be bought in Chêkiang at the same price as one of the coarsest woolen cloth in France. The price of raw and manufactured silk is said to have trebled since 1842, and the rise is a frequent source of lament with those who derive from it no immediate benefit.

Silk classification.—The raw silk is divided into two great classes, viz, tsatlee and taysaam, and these are again subdivided into various descriptions and qualities, according to the districts whence they come, the reel or the length of hank, and the style in which they are made up. For instance, tsatlee comprises all those silks current in the neighborhood of Nanzing, Ningpo, Haineen, Yuenfa, and Hangchow, while taysaam embraces the produce of Kahshing, Wusei, Laeyang, Suhing, etc. The former is a fine, the latter a coarse, class of silk.

In order to show the importance of this industry to Hangchow, I quote the figures as computed by the Shanghai customs some years ago for the Lyons Chamber of Commerce. It is to be regretted that they do not embrace more recent dates, but as this great industry is increasing by leaps and bounds, it will give some idea of the field soon to be opened to foreign enterprise.

Total amount of silk exported abroad from China and the proportion of the whole received from this district (near Hangchow).

District.	1884.		1885.		1886.	
	Raw.	Other kinds.	Raw.	Other kinds.	Raw.	Other kinds.
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
From all China, except Chêkiang	1,621,500	2,342,200	1,539,733	2,248,000	2,602,800	3,365,867
From Chêkiang	6,536,400	4,733,400	5,142,000	4,605,333	5,995,600	6,763,333
Total	8,157,900	7,075,600	6,681,733	6,853,333	8,598,400	10,129,200

District.	1887.		1888.	
	Raw.	Other kinds.	Raw.	Other kinds.
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*
From all China, except Chêkiang	3,430,800	4,360,266	2,137,133	4,654,933
From Chêkiang	5,463,066	8,566,400	6,349,733	7,589,733
Total	8,893,866	12,926,666	8,486,866	12,244,666

The following are extracts from the memorandum on Chêkiang silk, furnished by Claude A. Rees, esq., to the imperial maritime customs:

The greatest silk-producing province in China is Chêkiang, and Kiangsu comes second. Statistics as to Chinese consumption are impossible to obtain, even in these two—the best known—provinces, and when Anhwei, Szechwan, and the northern departments have further to be considered, the question as to the total production of silk in China becomes practically unanswerable, the only vague opinion that natives can give being that their consumption takes more than double the quantity that is exported to foreign countries. The two great divisions in silk, as exported from central China, are known in all consuming places as "tsatlees" and "taysaams."

"Tsatlee" is simply the Cantonese for "tseh 6," or 7 li; that is to say, an area of that dimension, taking Nanzing as the center, where, at any rate in old times, the best fine-sized silk was produced. The radius has been extended (in consequence of the higher prices paid for fine, compared with coarse, sorts), and "tsatlees" now include some silk reeled from Sinze and Seloo cocoons, which formerly were only employed for silks of the coarser thread, considerable quantities of tsaysaams still, however, being reeled in these two last-named districts. At the present moment, tsatlee means silk produced at Nanzing, Chinza, Linglooh, Shwangling, Woochin, Leensze, Hoochow, and a portion of Sinsze and Seloo, besides the intermediate towns, all situated in Chêkiang.

Taysaam, being interpreted "a big worm" (an appellation we could never find verified by facts, *i. e.*, as to the larger size of the worm or cocoon), has really only the signification of silks of a coarse reeling, and under the denomination are classed silks from Kiahsing, Sinsze, Dongse, Shaouhing, Woosieh, and Laeyang, the last two districts being situate in Kiangsu.

A few smaller divisions of the article deserve mention:

(1) Haining or Yuenfa, situated in Chêkiang, produces silk reeled of the finest size known in China, and when native consumption was crippled by the Taiping rebellion, large quantities yearly found a ready sale in Europe. Of late years, however, the export has dwindled down to almost nothing, as natives pay more for the silk for their own purposes than foreigners think it worth. Some of it, however, is still made into rereels (which are principally exported to America), and to which allusion is made further on.

(2) Hangchow, also in Chêkiang, produces both fine and coarse sized silks (tsatlees and taysaams), the size of the former from this district very nearly approaching to that of Kiahsing taysaams, and they are generally in favor both for export and home use, while the coarse sorts are mostly taken by Chinese.

(3) Shaouhing (Chêkiang) produces a very considerable quantity of silk that, when reeled on foreign methods, is equal to any in the Empire, but which, as natives persist in reeling on a large wheel, and without care, has gradually lost all interest to foreigners.

(4) Laeyang (Kiangsu) must produce from 3,000 to 4,000 bales annually; but the same remarks as those applied to Shaouhings also apply to this district's production.

The principal towns where throwing is carried on are Nanking, Soochow, and Hangchow, and the business must be large to meet the enormous piece-goods trade of China. Formerly foreigners used to export considerable quantities both of trams and organzines, but the improvements made in Enrope, which have not extended to China, have extinguished the trade.

The rereeling of silks (for the purpose of rendering the manipulation of the silk easier to manufacturers) is carried on in the centers of Nanzing and Chinza and the outlying farms or hamlets. The production is considerable, as shown in the table below, and would be larger if the Chinese would use greater care and abstain from adulterating the silk during the process.

I append the following table of the foreign consumption of the silk of the two provinces

for the last four years, and regret that I can not collect the statistics further back; season, June 1 to May 31.

Description.	1888–89 (to date).	1887–88.	1886–87.	1885–86.
From Chêkiang:	*Bales.*	*Bales.*	*Bales.*	*Bales.*
Tsatlees	24,434	27,836	24,300	25,201
Hangchow	1,695	1,590	1,533	1,758
Kiahsing	2,146	2,760	2,633	2,744
Green Kiahsing	1,544	2,110	2,509	2,060
Chincums (Singsze, Dongse)	395	830	946	355
Shaouhing	15	44	120	44
Rereels	4,843	3,774	5,422	7,241
Total	35,072	38,944	37,463	39,403

The number of silk-weaving looms in the province of Chêkiang in 1881 was estimated as follows: Huchow, 4,000; Hangchow, 3,000; Shaoshing, 1,600; Ningpo, 848; total, 9,448. The annual production of silk piece goods was estimated as follows: Huchow, 204,000 pieces; Hangchow, 71,650 pieces; Shaoshing, 32,500 pieces; Ningpo, 8,400 pieces; total, 316,550 pieces.

Huchow, near Hangchow, holds the first place among the departments of the whole Empire of China for the production of silk, and the country people consider it their most important staple. The production of the year 1878 was 3,800,306 pounds; for the year 1879, 4,405,594 pounds.

Silk weaving and silk weavers.—In addition to producing a fine raw silk, the district of Huchow manufactures two kinds of silk piece goods, one called huchow, a kind of crape, figured and plain, and the other called menchou, having the appearance of cotton goods. One-half of the looms work the year round; each loom produces about one piece in every three days, or 100 pieces a year. About 500,000 pounds of the raw material is used annually in the local trade. Mench'on is used for underclothing, etc. About 3,000 pieces are manufactured yearly for provincial custom.

Looms for figured crape are worked by two men, and for plain crape, or plain satin, by one man.

The mounting on the loom is done by the weaver himself; as proprietors of looms do not always perform the work, a laborer is hired for the purpose. In this case, the wages of the weaver and his assistant are divided, the weaver receiving 75 cents (Mexican) and the assistant 50 cents, or $1.25 (62 cents American) for both, per piece 48 feet long and requiring three days' labor.

At Cheutsa, there are large firms who buy the manufactured goods from the weavers, who in turn buy the silk needed to carry on their work.

The great portion of the silk piece goods, being light in weight, is manufactured by the women. The average pay of a weaver for a piece 45 feet long is 55 cents (Mexican), requiring two and a half days. About 800,000 pounds of raw silk are employed annually.

At Kiahsing, in 1879, there was manufactured 742,938 pounds of silk, and it has been constantly increasing. Two kinds of silk are produced in that district, white and green. Hangchow, the capital of this province,

although a great producing and manufacturing center does not compare with Huchow. In 1879, 1,247,981 pounds of silk were exported from Hangchow, and it is well known that since that date this industry has increased wonderfully. The reputation of producing the finer goods and best qualities of silk has had considerable to do with augmenting the total volume of trade, and it is the only place in China producing two kinds of damask, called by the Chinese hsienchou and menchou. The difference between the two is that the former is dearer, owing to the silk used for the organzine being more twisted than that used in the latter, and, consequently, is thicker and heavier. Besides these special kinds, Hangchow manufactures the finest crape in the world. Each piece of silk on leaving the city pays a likin duty of 45 tael cents. There is no duty on looms here, as is the case in most of the other departments.

In Shaoshing, there are something over 2,000 looms. In the year 1879, there were manufactured 32,500 pieces of silk. Shaoshing produces a silk lighter than crape, which is in demand for summer wear. Satin is also manufactured here.

In Ningpo, there were, in 1879, 848 looms working, most of them all the year round, manufacturing 8,400 pieces of silk. This city produces satins, damasks, gauze, and crape. Shanghai, from whence all the silk manufactured in this consular district is exported, produces no silk at all.

At Hangchow, there is an imperial silk factory, supervised by a high commissioner appointed by the Emperor. This factory employs about 150 looms and some 200 or 300 workmen, each receiving about $6 (Mexican) per month, and being allowed, after the completion of orders from Peking, to employ their spare time in executing private orders, but they must at all times hold themselves at the disposal of the Court. Sometimes orders have to be executed without delay, necessitating their working night and day. The output of this factory must be immense, but there is no record of it accessible to us. During the preparations for the birthday festivals in honor of the Empress Dowager's sixtieth birthday, the factory was completely overwhelmed with work, one order alone calling for 15,000 pieces of a certain kind of red silk for decorative purposes.

According to the estimates of M. E. Rocher in his report to the inspector-general of the imperial maritime customs, to which I owe much of the above information relating to silk, the total consumption of silk in the province of Chêkiang for the years 1878 and 1879 was 7,190,701 pounds and 8,035,037 pounds, respectively, showing a gain in the traffic of over 845,000 pounds in one year, and the increase has been steady ever since. He concludes his report as follows:

The facts and figures given in the preceding pages, together with the general improvement they show, compared with the production of previous years, justify the opinion that the silk industry in general has considerably improved. The people, awakening to the fact that it is in their interest to increase the development of this already important trade, are extending the plantations of mulberry trees, and should the country continue to enjoy peace, and no epidemic arise among the silkworms, the next few years will witness a considerable augmentation over the present production (1879).

The imperial customs report for 1894 gives the following information:

Favored by the conditions of exchange, the export of native produce to foreign countries has, in a certain measure, been stimulated. The value figures for 1893 show an advance of 6,000,000 Haikwan taels above those for the preceding year. The products which contributed chiefly to this increase are sundries not locally produced. Silk, the important local staple, has been unfavorably affected, principally in its raw state, cocoons and piece goods showing some improvement. From reliable sources, I learn that the year was one of great disappointment and severe losses to all engaged in the silk trade. The disappointment was more keenly felt because the season opened with exceptionally good prospects. Up to the end of April there was a steady and increased consumption both in Europe and America, the deliveries through the Lyons conditioning house for the first four months being 34,500 bales, against 24,500 bales in 1892. The prices of tsatlees, gold kilin class, rose from 29 francs per kilogram (10s. 3d. per pound), the current values at the opening of the year, to 34 francs per kilogram (12s. 3d. per pound) in May. Up to that time the demand for Chinas had been strong enough to exhaust the available production of 1892–93 and to trench upon the supplies of the new crop to the extent of 8,000 to 10,000 bales. From May to December the trade suffered from almost every possible adverse influence—bank losses in Australia, by which many thousands of people in the United Kingdom were impoverished; a financial crisis in America of unprecedented severity, from which all classes in that country are but slowly recovering; financial troubles in Italy, which seriously embarrassed rulers and merchants; political disturbances in South America, which shut up for months one or two important markets; agricultural depression and short crops all over Europe; and severe labor conflicts in England. When to these unfavorable conditions are added threatened rearrangements of the tariff on silk piece goods in America and the ever-falling gold price of silver, it must be acknowledged that the decline in the gold value of silk between May and December is fully accounted for. At the close of the year tsatlees, gold kilin class, were quoted at 25 francs per kilogram. Chinese dealers were saved from ruinous losses by the course of exchange, which kept up the tael value of silk in spite of the decline on all consuming markets. In January, tsatlees stood at 335 taels; in May, at 390 taels; and in December, at 340 taels.

The filature industry was favored during the early part of the year by an eager demand for all the possible production, and since the collapse in Europe and America, lower rates of exchange have afforded filature owners and agents great advantages in competing with French and Italian raws. A considerable quantity was fixed in May for forward deliveries at 800 taels per picul and upwards, and although values in December were about 20 per cent under that price, the fluctuation is not to be compared with that of first-class Cevennes raws (with which the best filatures compete), quoted, in Lyons, in May at 82 francs and in December at 49 francs per kilogram.

Total quantity of silk brought into Shanghai under transit passes in 1893.

Department.	Wild.	Cocoons.		Refuse.	Cocoons, refuse.	Wadding.	Total.
		Whole.	Pierced.				
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
Shaoshing	.....	557,100	64,133	12,266	133	.....	633,632
Hangchow	.....	16,533	6,400	91,200	1,600	.....	115,733
Huchow	2,933	184,666	171,600	1,596,533	120,000	284,266	2,359,998
Chiahsing	.....	.....	400	24,666	.....	.....	25,066
Total	2,933	758,299	242,533	1,724,665	121,733	284,266	3,134,429
Principally Soochow, on the canal	.....	995,301	46,133	614,001	49,600	400	1,705,435
Grand total	2,933	1,753,600	288,666	2,338,666	171,333	284,666	4,839,864

Export of silk from Shanghai for the year ended December 31, 1893.

Exported to—	Raw.	Yellow, thrown and reeled.	Raw, wild.	Cocoons.	Waste.	Total
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
United States	701,915	.....	27,876	63,641	270,205	1,063,637
France	3,763,509	495,771	558,681	475,289	3,009,085	8,300,335
Elsewhere	1,431,059	1,297,568	217,976	379,341	2,137,841	5,565,785
Total	5,896,483	1,793,339	804,533	918,271	5,417,131	14,929,757

Total quantity of silk brought into Shanghai under transit passes in 1894.

Department.	Wild.	Cocoons.		Refuse.	Cocoons, refuse.	Wadding.	Total.
		Whole.	Pierced.				
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
Shaoshing	.....	959,866	80,000	110,933	5,200	.....	1,155,999
Hangchow	.....	.....	20,000	27,733	.....	.....	47,733
Huchow	1,600	3,858	29,200	1,298,400	11,033	76,933	1,421,024
Chiahsing	.....	32,800	400	81,466	.....	13,200	127,866
Total	1,600	996,524	129,600	1,518,532	16,233	90,133	2,752,622
Principally Soochow on the canal	.....	1,571,609	70,400	832,534	23,900	533	2,498,976
Grand total	1,600	2,568,133	200,000	2,351,066	40,133	90,666	5,251,598

Export of silk from Shanghai for the year ended December 31, 1894.

Exported to—	Raw.	Yellow, thrown and reeled.	Raw, wild.	Cocoons.	Waste.	Total.
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
United States	515,252	464,088	25,632	114,891	95,381	1,509,101
France	3,064,147	696,420	961,101	322,031	3,647,768	8,876,483
Elsewhere	1,681,793	953,269	334,427	456,798	2,683,378	6,120,045
Total	5,261,192	2,113,777	1,321,160	893,720	6,426,527	16,595,629

The increased value of silk is due partly to larger shipments—7,000 more piculs than in 1893—and partly to the enhanced prices realized on steam filatures, which figure for the first time in our statistics. The increased shipments were entirely to America and Italy, and were double those of 1893. The season opened in June on a basis of 322½ taels for gold kilin and prices remained unchanged till late in August, when an active demand caused them to rise 15 to 20 taels per picul. This improvement was not maintained and business dragged until late in October American buyers relieved the market by large purchases of native reeled filatures. In November, a fair business was done in raws for Europe on a basis of 313¾ to 322½ taels for gold kilin. An active market early in December advanced prices 5 to 7½ taels; but business again slackened till large purchases were made for Europe in January at rapidly advancing rates, gold kilin touching 350 taels.

Opening for silk machinery.—While France takes more than half the silk exported, the United States is the next best customer.

As all this silk is produced in a radius of 150 miles of Hangchow, it is more than a probability that, on the opening up of that city, the trade will be centered there, and with the advent of machinery Hangchow will shortly become the greatest silk emporium in the world. It is to be hoped that our people will be on the alert and seize every advantage while there is yet time. Every possible kind of machinery in the preparation and manufacture of silk will be in great demand. As our country is in the end the largest buyer of silk, it is only right that we should supply the machinery for manufacturing that silk.

COTTON AND COTTON MANUFACTURES IN CHINA.

In my report, prepared by direction of the Department of State, for the use of the United States Senate Committee on Agriculture, I wrote:

Cotton was introduced into China from India at the beginning of the Yuan dynasty, in 1260, and owing to its cheapness, it usurped the place of silk until the present dynasty, A. D. 1644. * * * In this province (Chêkiang) there are no large farms or plantations; each farmer cultivates a small plot from 2 to 4 mows (6 mows equal an acre). The practice on the Ningpo plains is to sow to 1 mow (one-sixteenth of an acre) 1 catty of seeds, equal to 1⅓ pounds, and in ordinary years this should produce from 25 to 35 catties (from 33⅓ to 46⅔ pounds) of clean cotton or cotton wool. Multiply these results by 6, the yield would be, per acre, from 200 to 280 pounds. * * *

The cost of 1 mow of cotton for labor and fertilizer is about $2.50 (Mexican); picked cotton seeds for 7½ catties for $1, so that 30 catties should fetch about $4, which would be an average yield for 1 mow. * * *

Since that report was issued, a factory has been established north of this settlement and on the banks of the river. This establishment is entirely under the control of the Chinese, but is worked on the foreign plan. It has proved so successful that it is in operation night and day, and twice the buildings have been enlarged. It is the only factory of its kind in this vast district and situated far from all foreign influences. It is a strange sight when one approaches the vicinity. The black smoke pouring from tall chimneys, the great brick buildings, and, as we draw near, see the coal piles and hear the hum and roar of the machinery, it is difficult to realize that we are in China and not in a New England manufacturing village. On entering the buildings our surprise increases as we witness the rapidity with which all work is executed in this factory.

I quote the following from the commissioner of customs' (Mr. H. F. Merrill's) report of trade for the year 1891:

"The success attending the cleaning of cotton by foreign machinery is a most interesting incident in the history of local industry. Not only are there many single hand-worked machines scattered throughout the neighborhood, but a steam cotton-ginning establishment with forty machines has been working at a point on the river 2 miles from Ningpo for the past three years, with steadily growing success. This establishment is owned by a Chinese company with a capital of 50,000 taels.

"The seed cotton is purchased at about $4.30 (Mexican) per picul, and 3 piculs of seed cotton make 1 picul of clean cotton, which sells for about $14.20 per picul, leaving a substantial cash profit in addition to the value of the seeds, which is $1.60 for every picul of clean cotton. The business of the company has increased beyond the capacity of the establishment, which is to be greatly enlarged and new machinery is to be added during the coming year. Their sales of ginned cotton in 1891 were 30,000 piculs (4,000,000 pounds)."

At a recent visit to this establishment I learned the following: There is one new engine made in England of 50 horsepower, one old engine made in Japan of 16 horsepower (total horsepower, 66), one new boiler made in England, and 72 ginning machines made in Japan.

There are 358 Chinese women and girls, 208 Chinese men and boys, and 6 Japanese, or a total force of 570 employed, one-half as a day force, the other half working at night. The 6 Japanese look after the machinery, while the whole force is under the management of a native, who is called the compradore.

The daily average consumption of raw cotton is 540 piculs (72,000 pounds), from which the average output of clean cotton is 178.2 piculs (23,751 pounds) and the yield of seed is about 361 piculs (48,736 pounds). Taking the customs figures, we find that the raw cotton consumed daily, per average 540 piculs, costs $4.30 (Mexican) per picul, or $2,322 (Mexican), or, at the average rate of exchange (treasury) for 1891 (76 cents in United States gold) $1,864.72 (United States gold), from which there was realized from this sale of 178.2 piculs, at $14.20 (Mexican) per picul, $2,530.44 (Mexican), or $1,923.13 in United States gold; profit on cotton, $58.41, to which must be added the amount realized from seeds, which average daily 361 piculs at 50 cents (Mexican) per picul, $180.50 (Mexican), or $137.18 in United States gold. Total gross profit for twenty-four hours, $195.59 (United States gold).

This is the largest cotton-producing district in China, and since the above report was written describing the mill in this neighborhood, another and far more extensive mill has been erected alongside of the old one. The machinery is now being put up, and it is expected to be ready for work within the month. This new company was formed in the spring of 1894 with a capital of $450,000 (Mexican), all of it being subscribed by Ningpo and Shanghai native capitalists. The mills were erected near the old mills in order that they could be run in connection with them, so that cleaning, spinning, and weaving will be done on the same premises. The number of spindles is to be 18,000 and of looms 400. Some idea may be formed of the size of the main building when I state that the first and second floors are 450 feet long by 150 wide in the clear.

As, according to the new Japanese treaty, machinery can be imported and all sorts of mills erected, we may confidently look for great activity in the erection of mills, both here and at Hangchow. Now that the great drawback of official interference has been removed, the extension of cotton manufacture will soon be so great that it is not improbable that not only will the importation of our cotton goods rapidly dwindle, but we may even be a purchaser in the China market. It is certainly necessary for our manufacturers to be on the alert. It would seem, after all, as if the following, taken from the North China Daily News of three years ago, is about to come to pass. Once the native has a free rein, he will be found keenly competing with the foreigners in erecting mills along this valley to Hangchow and in and around Hangchow.

[From the North China Daily News, October 7, 1893.]

The general belief in Bombay up to now, says the Times of India, has been that China would never be able to spin 20s yarn without importing Indian cotton, when, of course, the advantage of erecting cotton mills there would be greatly neutralized. An article in one of the trade journals received by this mail puts the matter in a somewhat different light. The results seem to have been obtained from Chinese cotton and Chinese labor alone, and from a preliminary trial, the article states that a pattern has been received at the Manchester Chamber of Commerce of the first piece of cotton cloth produced at a new mill at Wuchang, near Hankow, on the Yangtze. The pattern received in Manchester resembles a T cloth or

light domestic. Its width is 32½ inches; it counts 15 by 11, and is made from about 18s or 26s yarn. The yarn is clean, fairly even, and of good color, but the cloth has rather a rough appearance, due, perhaps, either to the harshness of the size or to the fact that the pattern was cut from a piece woven before the loom had been put in proper working order. If, as seems clear, these results have been obtained from Chinese labor and Chinese cotton alone, as the outcome of a preliminary trial in a district where the necessary machinery for producing these results was hitherto unknown, we certainty have food for reflection here. The Shanghai Cotton Mill Company, again, turn out immense quantities of native drills, sheetings, and yarn, and these items are officially described as being "esteemed as of better quality and more suitable for native requirements than the foreign article." In the Ningpo district, during the past twelve or eighteen months, the cultivation of cotton was extended to a most remarkable degree. Large shipments were sent to Japan, Amoy, and South China, and one shipment was even dispatched to Calcutta. The use of foreign machinery, worked by hand, is, according to the British Trade Journal, growing quite general; while at the steam-ginning mill on the banks of the river, just above Ningpo, nearly eighty machines have been erected, and are turning in net profits to the tune of $15,000 a year.

[From the China Gazette, June, 1895.]

THE CHANGKEE COTTON MILL.

The Changkee cotton mill, which occupies the premises of the old Empire Brewery, Yangtszepoo Road, is expected to be working in a couple of months. It is a very extensive establishment, for the brewery has been added to considerably by a long row of buildings erected at the back, and it is intended as time goes on to still further increase the size of the concern. The main building, which faces the road, is 300 feet long by 100 feet wide and runs north and south. Here are placed 12,000 spindles, which it is thought will be amply sufficient for the present needs of the mill. At the north end, in a semidetached building, accommodation is provided for a few looms. The scutching room is situated in the southern end of the main building, from which it is separated by a fire wall. Indeed, one of the most commendable features of the whole concern is the attention which has been devoted to precautions against fire, there being no wood used in the building except what is absolutely necessary, everything else being made of iron and brick. There are two large boilers in the boiler house, each measuring 28 by 7 feet and capable of sustaining a daily working pressure of 100 pounds. They are made by the Oldham Boiler Company. In the same house, is a set of Green's economizers, consisting of 120 tubes. The engine, which is the work of a well-known Lancashire maker, J. H. Woods, of Bolton, is of the horizontal, compound, surface-condensing type, having cylinders measuring 18 and 36 inches, with a 24-inch stroke, and working up to 350 horsepower. Adjoining the engine house is an admirably fitted machine shop, containing lathes, planing and drilling machines, etc., and further on is the room containing the electric-light plant, which consists of a vertical engine, made by Marshall, of Gainsborough, connected with a Crompton dynamo, for working 400 16-candlepower lamps; a Gardiner machine, driven by a smaller engine, also by Marshall & Co., capable of working 100 lights, acting as a pilot circuit. The internal arrangements of the mill have been designed by Mr. Inglis, agent for Asa Lees, a well-known maker of cotton machinery, who, however, has not before fitted any mill in China. The manager of the mill, Mr. Ma, is a gentleman well known in the cotton trade in Shanghai, and altogether the new concern is starting with every prospect of success. Later on, a ginning mill will be erected on the east side of the road, to supply the Changkee spinning mill with clean cotton. The machinery for the ginning mill is now being made by the Shanghai Engine Works and some local native manufacturers.

THE EXTENSION OF COTTON MANUFACTURE IN CHINA.

[Translated from the Shênpao,* of December 7, 1892.]

While taking our tea and chatting, we heard a knock at our door, and a friend came in. Having complimented one another and taken seats, we asked our friend what he thought so far with regard to this year's trade. In reply to our question, our friend said: It has been more or less uneventful as far as outward appearances go, but it is not always wise to judge by outward appearances; there are currents under the surface which are very much more powerful than the inexperienced would credit, and the fact that they are under the surface does not detract from their strength. You that publish a newspaper ought to point out what is right and what is wrong, and how important it is for the people to be wealthy, so that the country may not experience the hardship of poverty. One of the most marked features of the trade this year is the fact that there is a large and increasing business in the import of Indian yarn, which is shipped to all parts of the Empire, and, concurrently with this, there is a large export of China cotton to Japan, for the use of the Japanese mills. We think the explanation of this apparent phenomenon must be wrong, but we have good authority for stating that it is official interference with the ordinary channels of trade which has brought about this absurd state of things. Here are we Chinese growing the best cotton of its kind in the world for the benefit of Japanese, while we are importing inferior Indian cotton yarn to make into clothes for our population. Any man in his senses would naturally ask why we do not spin our own cotton for our own use. The answer is that the Japanese mills can afford to pay a better price for it, after paying our export and their import duty, than our people can afford to pay for it to spin it into yarn. Their steam mills can work so much more cheaply than our hand labor, and Indian steam mill-spun yarn is also so much cheaper than our native hand-spun yarn. Why does all the money which goes into the pockets of the Japan steamers which carry away the cotton, the insurance companies who insure it, the Japanese Government who impose duty on it, and the Japanese spinners who spin it, why does all this profit not remain in China? Why does all the profit of Indian mills, the freight for bringing Indian yarn to China, the insurance, the merchants' profits, why do Chinese not save all these by spinning yarn themselves? These questions are in every mouth, and, strange as it may seem, there is only one answer—that the mandarins will not allow mills to be built and worked by the people. One naturally asks what have the mandarins to do with trade; it is their duty to look after the interests of the people and the country; they can not understand the details of business themselves, which require special training and supervision—why should they interfere? Probably we shall not be believed in saying that certain mandarins, knowing that large profits are to be made by Chinese using their own produce, treated by foreign methods, have resolved to create a monopoly of this industry, and that they have started mills from which they hope to reap large profits by keeping the industry in their own hands; that they are so shortsighted that they can not see that by this policy they are preventing the trading classes from developing trade and forcing them to pay immense sums yearly to foreigners. We have asked on all sides for an explanation of this reputed explanation of the state of affairs, and the only thing we can hear which supports the mandarins' position is that they object to foreigners building mills here. They have started one mill themselves and have allowed Chinese to start another under their supervision, but they will not allow Chinese or foreigners to build mills and work them without their supervision and interference. What trade, what business, can prosper under management of men who don't understand it. If we want a ship built, do we go to a doctor to superintend the building? If we want a house made, do we go to one of the crockery dealers for it? Then why are mandarins expected to understand the management of a complicated business like a spinning or weaving mill, which has to compete with the foreign mills, managed by experts? The objections to foreigners assisting to show Chinese how to work this business are, to our minds, absurd. If foreigners, for their own profit, are shortsighted enough to show us how mills are managed

*Chinese newspaper of great influence.

elsewhere, why should Chinese not let them do so? There is room in China for hundreds of mills, which will increase the wealth of the people, stimulate the growth of cotton, and find employment for thousands of people in all kinds of weather. What difference will a few foreign mills in Shanghai make, which is practically the only place they can establish them. In our opinion, they ought to be encouraged to assist Chinese in the development of their industries, because a great part of the profit will be China's. Suppose a place like Shanghai were to be eventually developed by the officials, and there were a number of such undertakings established, what a prize such undertakings would offer to a foreign power in case of war. Shanghai is not an easy place to defend against foreign ships and guns, and if officials had millions of taels invested here, it would be certain to attract a foreign army in the event of war between China and any great foreign power, whereas if foreigners were largely interested in the various undertakings, there would be a strong influence brought to bear to neutralize this important center of trade.

The question is of such importance that we can not refrain from putting these remarks into print, in order that our rulers may determine a change and save the country from being ruined.

Not only are mills being erected now at Shanghai and Ningpo, but also at many other places in this part of China, and, as before stated, as soon as the city of Hangchow is opened we may look for a boom in building not only silk and tea factories, but also cotton mills.

Our people have to compete with the Japanese in erecting and furnishing these mills.

The following extract is taken from the Ningpo customs report for 1894:

It is anticipated that, peace restored, China, profiting by Japan's experience, will develop her national resources by encouraging the general use of steam machinery. The number of factories springing up here proves that official encouragement is unnecessary and to be deprecated. Merchants see the profit gained by Japan from yarn spun from Chinese cotton; they know that filatures produce silk realizing 200 taels a picul more than will that spun from the same cocoons by the old primitive method, and that steam curing would raise the general average of tea to the level of the choicest crops. They are anxious to erect factories, and knowing they can run them more cheaply than officials can, they are willing even to risk competition. If, then, the Government leaves merchants a free hand, factories will come of themselves, and the profits will enrich the mercantile classes by millions of taels annually.

The export of raw cotton from Ningpo for the year 1894 amounted to 4,906,880 pounds.

STRAW GOODS, HATS, AND MATTING.

The manufacture of straw mats, if they can be called straw, for the raw material is a coarse grass, or rush, is a large industry in this province, employing thousands of hands in the season. Large shipments of matting are made to Amoy, Canton, the Straits Settlements, and to Europe. The rush of which the matting and hats are made is extensively cultivated; the soil chosen is such as would be suitable for rice. The roots are planted in autumn, in small branches arranged in rows, about a foot apart; the ground is kept under water. In early summer, the plants are cut and dried in the sun, becoming a brownish-yellow color.

In 1894, there were exported to Hongkong 18,200 mats and 3,016 rolls of 40 yards each to other countries, and this is but a very small fraction of

the quantity manufactured here annually, as the natives are the largest consumers. The war, however, has interfered somewhat with this trade, as with all others in China.

The growth of the rush-hat trade would be most satisfactory if there were not too much reason to fear that the expansion had been in fact too rapid and had been followed by the usual consequences. The producers finding that hats hastily and loosely woven sold just as quickly and at as high prices as those which had cost far more time and care to make, naturally sacrificed quality to speed, while shippers, also, under keen competition, neglected that thorough inspection which is just as necessary in this business as in buying straw braid further north. If one merchant refused a cargo, his neighbor, foreign or Chinese, would take it, and so supplies have been pushed forward and the home market flooded (as one of my informants puts it) with inferior, and, in some cases, actually unsalable goods. I should add that the deterioration chiefly complained of is in the cheaper grades, two-braid and three-braid hats; one-braid hats have kept their quality pretty well.

With regard to all rush manufactures—hats, mats, and matting—there can be no doubt that these goods are excellent for their purposes, being light, cheap, clean, and pleasant to look at, but while it continues (as at present) absolutely indispensable to examine every hat in the bale and every yard in the roll (and still more, while such frauds as the insertion of previously rejected goods in new lots are of frequent detection) the progress of the trade must be watched with very great anxiety.

An average worker can make four hats of good quality (12-inch, three-braid) a day; working carelessly and weaving loosely, she can nearly double her production. Each of such three-braid hats fetches between 7 and 12 cash, according to size. Two-braids are bought upcountry at 12 to 16 cash each, according to size, and one-braid at 18 to 40 cash. The final destination of the greater quantity exported is North and South America. Much that goes to London is reexported. Some of the finest qualities are even used in France and Switzerland, where some are bleached, sulphured, and prepared as imitation panama. With regard to rush hats, it would appear that there ought to be a good market in the United States therefor. One would imagine that hats that cost only 2 cents would readily attract purchasers.

In 1877, 14,000,000 hats were exported via Shanghai to Germany, France, and the United States, and the trade increased till 1890, when it collapsed, owing to the dishonesty of the merchants in palming off a lot of rubbish on the importers in Europe and America; but the latter are gradually forgetting that experience, and once more the trade is on the increase. In 1893, this district exported 2,619,600 hats; in 1894, 2,862,320; and the trade this year, now that the war is over, will probably, from present appearances, show a far larger increase, as already the shipments exceed by over 500,000 those of the same period last year (first quarter) and 700,000 more than were shipped during the first quarter of 1893. Many of the finer

grades are sent to France and Switzerland, where they are altered and shaped for ladies' wear, and in the imitation of the famous panama hat. Here, again, is another opportunity for our people, for by the erection of straw-plaiting machines and the manufacture of these hats under proper supervision, a new field will be opened not only for the makers of machines, but for the hat men themselves.

WINE.

Samshu is an export of considerable importance, although the business is in the hands of the natives and the export solely intended for Chinese consumption. The Chinese have a familiar saying that the wine of Shaoshing and the hams of Kinwha (both places in this district) are to be found everywhere. Both are exported from Hongkong to California and Australia, and Chinese who have traveled in Persia, India, and Thibet state that Chêkiang wine and hams are found in the most remote and inaccessible cities of those places. This wine has fallen into disfavor of late years, and is apparently little suited to the fastidious modern palate. Nevertheless, early travelers, and recent ones, too, speak of it, some with enthusiasm, all with respect. Friar Odoric (1322–1358) speaks of the wine of Hanchow as a noble drink. Rubuiquis says he could not distinguish it, except by smell, from the best wine of Auxerre (Chablis), and Ysbrandt Ides says that it might be mistaken for excellent grape wine. John Bell calls it "clear and strong as canary," and Captain La Place, quoted by Davis, says it approaches madeira in color and taste. In later times, the Abbé Huc, speaking of this samshu or Shaoshing wine, is indignant with European residents in China for the prejudiced judgment which he says they are always ready to pronounce on China's productions. He relates that one day he filled some bottles with it, sealed them with great care, and gave them to an English connoisseur in wine, who not only found it excellent, but discovered that it was the product of some celebrated vintage in Spain, and characterized by the true flavor and bouquet of Spanish wines.

The preparation of this wine at Shaoshing is said to date from the very earliest times, and the very invention of wine is ascribed to this locality; but though early established, it was not of any great importance until the time of the Mongol dynasty, when Kublai Khan, in 1285, exempted wine from the imposition of taxes. Prior to this, tea and samshu were both subject to heavy imposts. It is sometimes urged in argument against the most fascinating traveler of the Middle Ages, Marco Polo, that he could never have visited the places he mentions in China, because he could not have failed to notice and chronicle a custom so strange as the use of tea. His silence, however, tends to confirm his veracity, rather than to impugn it. The Mongols, among whom he lived, were not accustomed to the use of tea, which, indeed, was not largely cultivated, save in Kiangsi and Hukuang, and the consumption, no doubt, was restricted by the burdensome tax under which the Chinese records show it to have lain. Even when samshu was exempted from impost by Kublai Khan, tea was still left taxed. Of late years, the use of

grain (rice) in the distilling of wine is looked upon with disfavor, and repressive measures, generally inefficient and easily evaded, are sometimes adopted with the view of checking the use of the grain and preventing any scarcity, or increase of price, in an article of food of such primary importance. The use of rice for wine, save in fixed quantities and under certain restrictive conditions, is prohibited by edict, and the licenses issued to the distilleries are said to contain the stipulation that none but spoiled grain shall be employed.

It is simply out of the question to obtain statistics showing the consumption of this wine, but it must be immense, for its manufacture gives employment to thousands of hands in the city of Shaoshing, 60 miles from here, on the road to Hangchow. The introduction of modern appliances in making this wine will be one of the results of the new treaty, permitting the introduction of machinery, and owing to the situation of Shaoshing, halfway between Ningpo and Hangchow, the opening of the latter city is bound to give an impetus to the trade. Possibly there is an opening here for our manufacturers of brewing appliances.

The export of samshu for the year 1893 was 6,734.51 piculs, or gallons; in 1894, 8,225.8 piculs, or gallons.

THE ALUM INDUSTRY.

Alum is mostly exported from Shaishing and Chihchi. It is obtained from Fanshan, in the Sungyang hills, near the borders of Fukien, a few miles from Wênchow, in this province. The locality was first visited by a foreigner in 1855, who gave the following particulars:

> Three hours' hard walking over a succession of precipitous hills crossed by stone steps and pathway brought me to the mines. The works are adjacent to the quarries from which alum stone seems to crop out of the decomposed rock of the same lithological character. The stones were thrown into a fire of brushwood, where they burnt with a slight lambent flame, and as they cracked the fragments were raked, broken into small pieces, and macerated in vats. Subsequently the disintegrated mineral was thrown, with water, into a vessel having an iron bottom and sides of wood, and boiled for a short time; the lixivium was then poured into large reservoirs, where they are crystallized into a solid mass. Blocks of alum weighing about 50 catties were hewn out of the reservoir and carried in this state in bamboo frames, on each end of a porter's pole, to the place of shipment, where it is broken into fragments. When not designed for immediate exportation, the blocks are stored away for drying.
>
> On reaching the depot, the blocks are found charged with a double quantity of moisture, for the coolies, being obliged to deliver a certain weight, slip their burdens into mountain streams which they pass in their journey. The supply is inexhaustible, apparently. Immense quantities are used by the Ningpo dyers. The Wênchow alum is equal to the best Roman. A roseate tint in some specimens indicates the presence of minute quantities of iron. No potash or other mineral is employed in the works. Iron and silver are to be found in some parts of this district.

Alum is employed by the Chinese in purifying the water which they use for cleaning purposes, in sizing and whitening paper, as a cement, and to a large extent in drying silk, cotton, and grass cloth, or in their bleaching. The Cantonese use it in the manufacture of glass. It is also largely used in the silver and pewter works of Ningpo, in medicine, and in tanning leather. The

Chinese state that alum was first introduced into China from the west, but the Wênchow deposits have been, according to local tradition, worked from time immemorial. There are said to be ten large alum-making establishments at Pehkuan, producing on an average 90,000 piculs per annum. The alum does not appear to be obtained from calcined mineral, but by lixiviation from deposits of shale, which are said to run in broad bands or strata along the hillsides. This shale, according to a customs report, is placed in heaps, a layer of brushwood alternating with a layer of shale, a fire kindled, and the heap is calcined. The mineral is then placed in shallow cisterns and covered with water, which, after a time, is drawn off and suffered to precipitate. Precipitation completed, the alum is again covered with water, exposed to the sun and allowed to crystallize.

Alum enters largely into native medicine, and although the Chinese are unacquainted with any accurate method of chemical analysis, experience and patient observation have enabled them to obtain a fair insight into the essential properties of the mineral.

The export of white alum from Wênchow, in 1893, was: To Hongkong, 125,148 pounds; to Ningpo and elsewhere, 199,683 pounds. Last year, owing to the war, the export of white alum from Wênchow did not appear in the returns. From Ningpo, in 1893, 12,146,737 pounds were exported, but, in 1894, owing to the war, the exports fell to 9,275,268 pounds.

It is needless to point out the field soon to be opened here and the opportunities for modern appliances which will offer. Wênchow is already a treaty port and within easy access of Shanghai, Hongkong, and Japan, and there is no doubt but that this industry will soon feel the effects of the new era, for no matter what may be the political outlook, the fact remains that the advent of machinery in the industries, that have so long lain dormant, is bound to increase business and increase the volume of trade.

THE HEMP INDUSTRY.

The cultivation of rhea is referred to in works written before the Christian era. The most elaborate work by any foreigner treating of rhea in this province was written some five years ago by Mr. Hosie, British consul at Wênchow (in this province), in this consular district. Mr. Hosie gives an original translation of an article in the Nung-Chêng Ch'üan Shu, or complete treatise on agriculture, published in 1640. The treatise gives what may be called the standard system, and Mr. Hosie's object is to show how the practice differs from this in this province. Mr. Hosie says:

I can confidently assert that a Chinaman can extract fiber from the peel at the rate of 12½ ounces an hour. There is no cleaning required—the fiber is cleaned in the process of extraction. I give the results of my experiments. A bundle of peel collected from one hundred stems in fifteen minutes weighed 3½ pounds; after being steeped in the tub of water for some time, it was taken out and found to weigh 4¼ pounds. The workmen at once commenced upon it, and in thirty minutes extracted the fiber, which, in its wet state, weighed 1¼ pounds. It was then hung over bamboos in the open air and left to dry for six hours, when it weighed 6¼ ounces. A similar bundle of peel produced exactly the same result. Working ten hours a day, therefore, one man can produce 125 ounces, or nearly 8 pounds, of fiber

ready for the market in a day. As a matter of fact, the workman told me that he could extract 8 catties, or 10⅔ pounds, a day, but I prefer to give 8 pounds as a maximum.

Mr. Hosie then enters into some calculations as to the probable outturn per acre. He estimates, from repeated measurements and calculations, that a crop of 80,000 stems can be reckoned per acre, giving, on the data shown above, 312½ pounds of dry fiber. As three crops are cut annually, Mr. Hosie considers that the outturn may be held at under 937½ pounds, the third crop being inferior in produce to the two others.

The above-quoted report also states that it is already so widely known that the cultivation of rhea offers no difficulties, that it is needless to take further steps to prove this, and that should a really useful and practicable machine be invented for preparing the fiber cheaply and efficaciously the inventor would find it more to his advantage to patent the machine and place it before the public, rather than claim the Government reward, which, unless made an unusually large one, would not be commensurate with the advantages the inventor would be called upon to resign.

All the southern coast line of the province, beginning near Taichow, about halfway between Ningpo and Wênchow, is favorable to the cultivation of rhea. This fiber is used for making cordage, sails, sacks, fishing nets, and other materials of a rough nature, while the hemp imported from the river provinces is made into cloth and commands a comparatively high price. Much of the plant is wasted, owing to the crude and unscientific manner in which it is dressed. The leaves and green part are not used as a stimulant, as in India. With the introduction of modern methods, there is no doubt but that this industry can be placed on a paying basis, and if there is a machine for its proper decortication (I think the French have recently invented a suitable machine), then I see no reason why it will not be of advantage to start in the manufacturing of articles from rhea.

The following are the kinds of hemp grown in this district, their cost, and use:

Districts.	Kinds grown.	Weight of bundles of 100.	Cost.	Use.
		Pounds.		
Hangchow	Pim ma	27	*$5.20	Center of mats.
Do	King ma	27	4.40	Do.
Do	Tseang ma	27	4.40	Rope.
Chiahsing	Huang ma	27	8.40	Bags.
Hsiachi	Tseang ma	27	3.40	Rope.
Fênghua	....do	27	2.40	Do.
Do	Huang ma	27	4.80	Bags.
Hsiangshan	Ch'u ma	27	9.60	Nets.
Shaoshing	Huang ma	27	5.60	Bags.
Taichow	Ch'u ma	27	11.60	Thread and fine nets.
Hsiaoshan	King ma	15	3.50	Center of mats.
Do	Tseang ma	15	3.50	Rope.
Yuyao	....do	12	2.40	Do.

* Mexican dollars.

The following statement shows the exports of hemp for Shanghai and Ningpo:

Year.	Hemp, raw.	China grass.	Hemp, prepared.	Sacking.	Twine and thread.	Skin hemp.
Shanghai.	*Pounds.*	*Pounds.*	*Pounds.*	*Pieces.*	*Pounds.*	*Pounds.*
1893	4,734,763	339,148	5,564	84,240	.....	.....
1894	15,977,088	574,289	2,914	73,870	2,288	147,331
Ningpo.						
1893	110,137	.....	.....	.....	.....	37,776
1894	43,616	.....	.....	.....	29,635	.....

In 1894, the first year a record of the exports of hemp is shown in the reports of customs at Wênchow, 7,380 pounds were exported.

THE INDIGO INDUSTRY.

In this province, indigo is produced in considerable quantities, especially in the southern prefectures. Fuyang, in the Hangchow prefecture, is the headquarters of this industry for this district. It is also produced near Fênghua, and in the neighborhood of Ningpo, especially up the world-famous Snowy Valley. Tourists visiting this beautiful valley in the fall of the year meet with numerous rafts laden with baskets of native indigo. The streams, too, are discolored with the dye at the time of preparation, and the green froth drawn off from the vats is carried miles away by the rapid mountain streams.

The preparation of indigo is extremely simple. The stems are cut down in the fall, thrown, with leaves, into a large tank filled with water, where they remain until decomposed. The process of decomposition is sometimes hastened by the addition of lime. The water is stirred and splashed into froth and the coloring matter allowed to settle to the bottom of the tank, when the water is drawn; the blue part, which remains, is packed into baskets each containing about 100 pounds.

With improved methods employed in the cultivation of the plant and scientific means for manufacturing the dye, it is not improbable that this province will be able not only to supply its immense home consumption, but become an exporter of the article. The use of indigo in this district is immense, as all cottons are dyed blue, which is the universal color of the clothing. The returns of imports are but an insignificant quantity compared with that brought in by the native junks from Formosa, Canton, and Amoy and over which the foreign customs has no control. About one-half of the total consumption comes from Formosa. The figures given at the custom-house are of interest, but it must be understood that they do not begin to show the total consumption of indigo in this district, for the reasons specified.

Import of indigo through the custom-houses at Ningpo and Wênchow.

Year.	Ningpo.		Wênchow, dried.
	Liquid.	Dried.	
	Pounds.	*Pounds.*	*Pounds.*
1893	432,513	34,257	4,648
1894	28,000	74,912	3,776

Import of dyestuffs through the custom-houses at Ningpo and Wênchow.

Year.	Ningpo.		Wênchow, foreign aniline.
	Native.	Foreign aniline.	
	Pounds.		
1893	7,625	*$18,196	*$7,126
1894	20,918	12,623	6,185

*United States gold.

In 1894, there were also sent inland to Shaoshing, Hangchow, etc., from Shanghai, under transit passes, 117,200 pounds of dried indigo. The total amount of dried indigo brought into this province, under cognizance of the foreign customs, in 1894 was 195,888 pounds.

VEGETABLE TALLOW.

The cultivation of the tallow tree is quite extensive on the Ningpo plain and along the valley of the Tientang, near Hangchow. There is an enormous demand for the products of this tree. This tree is of great utility and a source of considerable profit to the cultivator. From its leaves, a black dye is prepared, which is in great demand in this vicinity. The seeds furnish the tallow, and the kernels, when crushed, yield an oil, which is universally used for its vaunted faculty of turning gray hair black, as well as having other beneficial properties. The refuse is of great value as a fertilizer in the cultivation of tobacco, and the bark is used as a medicine. The seed is, in the berry, surrounded by a white, fatty substance, which discloses itself when the berry is ripe. This seed is crushed and boiled, the fat rising to the top is skimmed off, melted, and run into molds for candles. The output is far from sufficient to supply the demand, necessitating large importations of the native article, in addition to foreign kerosene oil and candles, now imported for illuminating purposes. The importation of tallow into this district for the year 1893 was 1,469,893 pounds; for 1894, only 353,380 pounds, as a result of the war.

NINGPO FISHERIES.

Ningpo is noted for its fine fish. The whole coast of China gets its supply from this port. It is estimated that the fisheries employ 30,000 men and over 5,000 boats. Cuttlefish gives employment to the majority of these. In

the season, from April to October, the seas in the neighborhood of the Chusan are covered with boats, making navigation not only difficult, but, at times, extremely dangerous to the passing steamers, owing to the crowded condition of the water. At night, it looks like a floating city as the steamer slowly passes through the fleet. The chief food of the natives being rice and fish, the demand for fish is something enormous, and the only available returns give us but a faint idea of the magnitude of this industry.

Export of marine products from this district through the customs in 1893 and 1894.

Description.	1893.	1894.
	Pounds.	*Pounds.*
Dried fish	416,000	496,400
Maws	113,540	113,000
Roe	56,661	.....
Skins	6,156	.....
Glue	176,625	143,000
Heads	9,249	2,152
Dried clams	29,750	35,495
Cuttlefish	9,540,847	2,494,810
Dried prawn, shrimps, etc	121,548	77,147
Seaweed and agar-agar	.....	35,847
Sharks' fins	2,376	18,118
Total	10,472,932	3,455,969

The great falling off for the year 1894 is accounted for by the military operations along the coast and the fear the fishermen felt of going to sea, and also owing to the impressment of themselves and their boats into coast-guard duty. The foregoing table makes no return of the immense quantities of shellfish—oysters, clams, crabs, etc.—that are yearly exported to the other ports of China. The clams, oysters, and crabs of this vicinity are not surpassed by the best product of the United States, being exceptionally fine, and the yield is immense. The oysters sent from here in the winter equal, if they do not surpass, those of the Eastern Shore of Maryland. Most of the oyster beds are in Nimrod Sound. There is, apparently, some system of cultivation which, while crude and imperfect, seems to recognize the necessity of a safe and favorable spatting field. In Nimrod Sound, the oystermen build low mud walls, covered with stones. These stones are removed every few months to prevent the mud from covering them, and when the oysters are full grown, they are shaken off. The difficulty of transport to Ningpo, owing to the lofty range of hills intervening, enhances the price and, consequently, limits the demand. With improved facilities of transport and modern methods of culture, there seems to be a good opening for the canning and preserving of oysters and clams, not only for this immense native market, but for the bordering foreign countries as well.

FAN MANUFACTURE.

The manufacture of fans is quite an industry in the cities of Hangchow, Shaoshing, and Ningpo, giving employment to large numbers of women

and children. These fans are all made in a very crude and tedious way, and doubtless, the volume of exports will be greatly increased by the introduction of machinery.

The use of fans in China is exceedingly great, for there can hardly be any other nation that uses such numbers, for their use is not confined to either sex. The fans are made of various substances, the principal, of course, being palm leaf, silk, bamboo, and feathers. The palm leaf is the one most generally exported to the United States. Different styles take their names from the towns in which they are made. The fan stores of Hangchow are well worth a visit, for there will be seen fans of every conceivable shape and style. The manufacture of these very useful articles is carried on, like everything else here, in a happy-go-lucky way. There are fans made here that I know would sell readily in the United States, if only exported. Doubtless this trade will come in for its share of the boom.

The export of fans from this district in 1893 and 1894 was:

Year.	Palm leaf.		Paper.	Total.
	Trimmed.	Untrimmed.		
1893	426,710	854,870	2,420,717	3,702,297
1894	61,800	106,600	2,876,403	3,039,803

The ever-recurring diminution of exports between the years 1893 and 1894 shows the effect of the late war.

MISCELLANEOUS INDUSTRIES.

The length of this report forbids a detailed account of the other numerous industries of this wonderfully fertile district, and I regret that I am compelled to forego a description of the paper manufactories, the pewter works; factories for manufacturing joss paper, or tinsel sycee; the cultivation of tobacco, the manufacture of vegetable oil, and of that wonderful mixture known as Ningpo varnish (the secret of its manufacture being sedulously guarded by the Anhui men, who alone are allowed to make it); of the beautiful inlaid work, of the exquisite Ningpo carvings, etc.; of soy, which is so largely used in the preparation of a famous English sauce; of the salt industry, that manufactures the finest salt in China and pays the largest tax in the Empire. In fact, I am compelled to confine myself to the small strip of territory covering the road between this port and Hangchow, thus ignoring the interior cities of Huchow, Chiahsing, Yenchow, Shaoshing, Kinwha, Chiichow, Taichow, Chuchow, each with its population of from 250,000 to 500,000 people, and the other thirty-three cities, each having a population of from 25,000 to 250,000 people; nor am I able to describe the treaty port of Wênchow, in the southern part of this consular district, with its famous black tea, now a growing industry, its peculiar square bamboo, its bitter oranges, famous for their medicinal qualities, and its soapstone works.

The coal mines, from which the earlier foreign residents obtained their coal and from which British men-of-war have been supplied, now being disused, owing to the difficulties of transportation, are known to be of great richness; the gold, silver, and copper in the mountains to the west are supposed to be very extensive. The rearing of sheep, introduced by the early Mohammedans, has developed until the district around Hangchow and Huchow supplies all middle China and Japan with mutton, while the export of wool is constantly increasing. The medicine trade, forming an item of great importance, must be ignored, as well as a description of the largest drug store in the world, situated in the city of Hangchow, and which in itself is a study, in order to bring this report into reasonable limits, but the tables appended will give some idea of the variety and wealth of the province of Chêkiang, the Mazi of Marco Polo.

I trust that the description of the industries carried on on the plains of Ningpo, along the road to Hangchow, will give some idea of this wonderfully rich district, of which Hangchow, soon to be thrown open to the world, is the center.

Doubtless the inadequate methods of travel and of transportation of freight in this province have been noticed by the reader. The opening of Hangchow to the world carries with it the right for inland steam navigation; here, then, is a field for the manufacturers of steam or electric launches, and I earnestly recommend to those interested in this trade that the requirements set forth in my report on steam launches in this district be studied.* Launches not in conformity as to size as specified in that report will be of no use here. Small stern paddle-wheel steamers might be introduced. Then, there is every probability of the construction of railroads, in which event the line will connect Shanghai, Huchow, Hangchow, Shaoshing, and Ningpo. There is no impediment in the way to the erection of this line. The coal mentioned above can then easily be brought to the coast, either via Hangchow to Shanghai, or direct to Ningpo. The working of the alum fields in the south, and the gold, silver, copper, iron, and other metals in the west are sure to follow. The fisheries, requiring immense quantities of ice, which is now laboriously collected from the rice fields in the winter, and then only in small lots, will cause a demand for ice machines for making ice (there is an immense market for ice here, and not a doubt of the success of ice making by machinery). Steam rice cleaners and tobacco factories for manufacturing cigarettes and pipe tobacco will be successful.

BRITISH MACHINERY FOR CHINA AND JAPAN.

By a singular coincidence, while the foregoing paragraph was being written, I am in receipt of a catalogue of machinery from a firm in Manchester, England, and it contains prices of machines which, no doubt, will have a ready sale in this district in a short time. Here are a few of the machines: "Rhea or china-grass decorticator, specially constructed for extracting the

*"Steam and electric launches in China," CONSULAR REPORTS No. 152 (May, 1893), p. 46.

fiber and capable of preparing 800 pounds per 12 hours, price £85 ($413.61);" seeding, scutching, and brushing machines, for flax or hemp; rope-making machines for rhea, etc.; spinning, plaiting, and sack-making machines; and a cotton-spinning mill for China.

COTTON-SPINNING MILL FOR CHINA AND JAPAN COTTON (10,000 SPINDLES).

This mill has been specially designed for producing low counts up to No. 26s from China and Japan cotton. The machinery, which is also specially constructed, consists of 10,000 ring spindles, with all requisite preparative machines and reels, and turns out per week of seventy-two working hours 23,000 pounds weight of average counts. The motive power consists of a compound steam engine of 350 horsepower, 2-28 by 7 feet Lancashire steel boilers, patent fuel economizer, and all necessary shafting, pulleys, stores, etc., complete. The total dead weight of the machinery is 510 tons, and the shipping measurement 1,260 tons. Everything, as regards machinery and stores, is furnished complete, including sufficient mill stores for a six months' supply; also, all boiler seating bricks and blocks, nonconducting composition, bundling presses, to make 5 and 10 pound bundles; a hydraulic press, to make bales of 400 pounds of yarn; main driving ropes and all strapping. Price, all complete, packed where required and delivered f. o. b. Liverpool or Manchester, £12,550; or c. f. i. Shanghai or any other Chinese or Japanese treaty port, £14,755. Detailed estimate on application. also, samples of yarn spun on this machinery from China cotton and cloth made from same.

The machinery consists of 1 opener, 2 double scutchers and lap machines, 31 carding engines, 2 grinding machines, 4 drawing frames, 3 heads of 5 deliveries each; 4 slubbings of 64 sp. each, 6 intermediates of 92 sp. each, 10 rovings of 128 sp. each, 40 ring frames of 250 sp. each, 40 reels, 2 yarn bundling presses, and 1 hydraulic yarn-baling press.

If required, the whole of the ironwork for the building in one story, viz, iron columns, rain spouts and gutters, corrugated roofing sheets, iron window frames, iron doors, ventilators, steam heating throughout the mill, window glass, and all small ironwork for the roof, f. o. b. English port, £2,865, or £3,360 c. f. i. Chinese or Japanese port. Weight, 350 tons.

Delivery.—In six months from receipt of contract.

Plans.—All building and foundation plans supplied gratis in four weeks from receipt of contract.

Skilled labor.—I can send out a competent erector to superintend the erection and start the plant, also an engineer, to erect and start the motive power. Each man would require passage out and home and £28 per month.

Terms.—One-third of contract amount with the order and balance against documents for each delivery. Shipments would commence in seven weeks or the entire plant could be shipped in one lot.

English, French, German, and Japanese are all on the qui vive, making every preparation, flooding the country with catalogues, sending agents to Hangchow, and even trying to obtain choice sites for mercantile purposes; but, so far as I know, not an American has made a move in the matter.

AMERICAN INTERESTS IN THE ORIENT.

One great fault of the few American enterprises now in the East is that they are represented by British subjects. I do not wish to be understood as impugning their honesty or business qualifications, but I do think it a most serious mistake to intrust American interests in the Orient to any but American hands. There are many reasons why Americans should be in charge of American enterprises; the most important, perhaps, is because, owing to the

extraterritoriality which we all enjoy, it is often a cause of doubt as to what court a case should be taken to, where the plaintiff belongs to one nationality and the defendant to another, who may be the representative of a corporation doing business under the laws of another country. One of the most important insurance companies of the United States is doing business out here. The whole concern is American and organized under American laws, but not a single American is employed in its affairs or represents it in any way in China. Another American corporation that has been doing a big business in China has now put its affairs into the hands of a British company, and as a result we can look for a diminution of the American commodity. There are enough respectable American houses here willing to represent all the enterprises that our people may wish to organize in China, and if suitable men can not be found here, it is preferable that our merchants and corporations send their own representatives out, rather than to place those interests in the hands of aliens, who could only be reached in a foreign court. Besides this, I do not know of a single British interest that is represented by an American here, nor would a British business man commit such an unbusinesslike act; on the contrary, they are always decrying everything American. The papers here never allow an opportunity to pass to find fault with that very insurance company referred to above, in spite of the fact that its control in the East is entirely in British hands and that it is probably their best-paying advertiser; and while no effort is being made on the part of the British agents of the American commodity, another and far more powerful English house is pushing the sales of a rival, but inferior, article in every possible way. Here is the spectacle of a most important article of American commerce represented by a British firm, who can not increase its sale, even if they would, and, on the other hand, another English house is increasing the sales of its rival by leaps and bounds. How different would it be if the American article were represented by American agents, as it ought to be. It is hardly fair to expect American officials to back up British merchants when their own countrymen are passed by, and yet this is what is expected. Place the handling of American merchandise and interests of every kind in the hands of Americans, and then see what a difference there will be in American trade and influence.

I mention this in the hope that these mistakes will not be made by our merchants at home asking British houses to help them, for, by so doing, they will only invite loss of prestige and loss of trade. No British merchant will push American trade under any circumstances; the international rivalry is too great in China. Better by far send out new men. American consuls will and can help American merchants, but they do not like to help build up British houses at the expense of Americans.

Only a few days ago, an American syndicate wished to build a railroad in Shanghai. One of the arguments used against it, and with effect, was, "it is American, and all lawsuits will have to be tried in the American court," and to obviate that drawback (?), the projectors offered to place the

enterprise under British law by incorporating it in Hongkong, although the money would be furnished by Americans living in America. This state of affairs is brought about by building up great British houses with American interests. Our steamship lines, our oil, insurance, machinery, flour, cottons—in fact, all of our trade—is represented by British merchants, who in turn buy the silks, teas, straw goods, wool, furs, etc., which they sell to us at enhanced prices and ship to the United States under their own flag.

The American house is a thing of the past, and yet to-day trade is better than it ever was before in China. If an English manufacturer wishes to sell his machinery out here, he sends his men out or else gets one of his own nationality to push it, as they do not allow their interests to be placed under an alien flag. Why should we not follow and give our business to our own people?

In 1866, the commissioner of customs at Shanghai wrote as follows:

The Americans in Shanghai are, as is the case everywhere else, in the ascendant as regards shipping. It is impossible to compete with their steamers, except by opposing them by others of the same kind and built on the same model. On the Yangtze line, seven steamers out of nine are American; the others are distributed among Ningpo, Hongkong, and Japan routes.

Only one American merchant steamer has been seen in Shanghai since 1884, and it was noted as a "novel sight" by the local papers last week; yet in 1884 there were 225 steamers entered in that port and 76 in Ningpo.

EXPORTS FROM THE NINGPO DISTRICT.

The following table shows the exports of native produce, as shown by the customs returns for 1894, not including those under the native customs, which are not available:

Articles.	Ningpo.	Wênchow.	Transit pass.	Total.
Alum, white.....pounds...	11,275,268			11,275,268
Bags, gunny.....number...	45,630			45,630
Bamboo:				
Brooms.....do.....	153,252			153,252
Split leaf.....pounds...	475,770			475,770
Shoots.....do.....	319,660			319,660
Beans, cured.....do.....	1,298,490			1,298,490
Bones, tiger.....do.....	2,321			2,321
Blubber, sea.....do.....	344,928			344,928
Cattle.....head...	679			679
Chaff powder.....pounds...	415,573			415,573
Charcoal.....do.....		645,760		645,760
China root.....do.....	12,515			12,515
China ware.....do.....	133,088			133,088
Cinnabar.....do.....	979			979
Cinnamon.....do.....	900			900
Clams, dried.....do.....	29,750			29,750
Copper:				
Cash.....strings...	10,200			10,200
Old gongs.....pounds...	1,648			1,648
Ware.....do.....	3,412			3,412

Exports from the Ningpo district—Continued.

Articles.	Ningpo.	Wênchow.	Transit pass.	Total.
Cotton:				
Raw.....pounds...	5,897,213			5,897,213
Rags.....do...	563,795			563,795
Coir and coir ware.....do.....		130,651		130,651
Cushions, rush.....number...	108,800			108,800
Cuttlefish.....pounds...	9,540,847			9,540,847
Dates, black.....do.....	58,621			58,621
Eggs, preserved.....number...	124,909			124,909
Enamel ware.....pounds...	1,081			1 081
Fans:				
Palm—				
Trimmed.....number...	61,800			61,800
Untrimmed.....do.....	106,600			106,600
Paper.....pounds...	2,876,408			2,876,408
Feathers, duck, etc.....do.....	89,807	16,561		106,368
Firewood.....do.....	5,546	4,940		10,486
Fish:				
Dried and salt.....do.....	416,000			416,000
Maws.....do.....	103,295	10,245		113,540
Roes.....do.....	56,661			56,661
Skins.....do.....	6,156			6,156
Glue.....do.....	176,625			176,625
Heads.....do.....	9,429			9,429
Nets (old).....do.....	91,284			91,284
Flour, arrowroot.....do.....	2,352			2,352
Fungus.....do.....	62,364			62,364
Furniture, inlaid.....pieces...	5,618			5,618
Ground nuts.....pounds...	293,347			293,347
Hams.....do.....	49,334	9,051		58,385
Hats (rush), native.....number...	191,200			191,200
1-braid.....do.....	1,034,520			1,034,520
2-braid.....do.....	48,600			48,600
3-braid.....do.....	1,588,000			1,588,000
Hemp.....pounds...	43,015			43,015
Twine and rope.....do.....	29,635			29,635
Isinglass.....do.....		4,259		4,259
Joss-stick powder.....do.....	417,096			417,096
Leather.....do.....	12,878			12,878
Lichens, dried.....do.....	22,715			22,715
Licorice.....do.....	35,631			35,631
Lung ngans, pulp.....do.....	16,905			16,905
Do.....do.....	41,412			41,412
Mats, rush.....do.....	1,240,387			1,240,387
Matting.....rolls of 40 yards...	3,016			3,016
Medicines.....value in Haikwan taels...	313,792	8,642		322,434
Musk.....ounces...	1,413			1,413
Mussels, dried.....pounds...	78,361			78,361
Nuts, lotus.....do.....	26,485			26,485
Nutgalls.....do.....	41,197			41,197
Oil, ground nut.....do.....	66,793			66,793
Oranges, fresh and bitter.....do.....		1,876,417		1,876,417
Opium lamps.....number...	1,732			1,732
Paper:				
Joss.....pounds...	492,833			492,833
Tinsel black.....do.....	2,877			2,877
Pewter ware.....do.....		2,713		2,713
Peel, orange.....do.....	10,905			10,905
Pipes (white metal), tobacco.....do.....	30,841			30,841
Prawns and shrimps.....do.....	10,433	12,345		22,778
Potato cuttings, dried.....do.....		326,500		326,500

Exports from the Ningpo district—Continued.

Articles.	Ningpo.	Wênchow.	Transit pass.	Total.
Rhubarb.....pounds...	6,533	.....	.....	6,533
Sawdust.....do.....	166,073	.....	.....	177,073
Samshu wine.....do.....	1,096,773	.....	.....	1,096,773
Seed, sesamum.....do.....	.....	.....	77,333	77,333
Sharks' fins.....do.....	7,681	2,694	.....	10,375
Silk:				
Wild.....do.....	.....	.....	1,600	1,600
Cocoons—				
Pierced.....do.....	2,211	.....	129,600	131,811
Whole.....do.....	.....	.....	996,524	996,524
Refuse and waste.....do.....	6,731	.....	1,518,532	1,525,263
Refuse cocoons.....do.....	.....	.....	16,233	16,233
Piece goods.....do.....	59,977	340	.....	60,317
Wadding.....do.....	.....	.....	90,133	90,133
Soapstone work.....do.....	.....	43,009	.....	43,009
Skins, fur:				
Clothing, sheep.....number...	4,879	.....	.....	4,879
Rugs—				
Cat.....do.....	749	.....	.....	749
Dog.....do.....	1,647	.....	.....	1,647
Goat.....do.....	18,232	.....	.....	18,232
Land otter.....do.....	3,337	.....	.....	3,337
Various.....do.....	228	.....	.....	228
Snakes, dried.....do.....	7,921	.....	.....	7,921
Stone:				
Slabs.....do.....	9,001	.....	.....	9,001
Mills, mortars, and pestles.....do.....	1,216	.....	.....	1,216
Sugar, white.....pounds...	20,743	.....	.....	20,743
Tallow:				
Animal.....do.....	136,747	.....	26,666	163,413
Vegetable.....do.....	.....	46,150	.....	46,150
Tea:				
Black.....do.....	33,183	448,308	.....	481,491
Green—				
Fychow.....do.....	9,977,666	.....	.....	9,977,666
Huapu.....do.....	9,924	253,753	.....	263,677
Pingsuey.....do.....	11,441,573	.....	.....	11,441,573
Dust.....do.....	257,514	.....	.....	257,514
Leaf and unfired.....do.....	272,121	120,188	.....	392,309
Tin-plate cases, old.....do.....	190,873	.....	.....	190,873
Tobacco, leaf.....do.....	36,308	320,192	.....	356,500
Umbrellas, paper (native).....number...	181,840	185,240	.....	367,080
Varnish.....pounds...	7,128	.....	.....	7,128
Wax, white.....do.....	23,064	.....	.....	23,064
Wood, poles.....number...	.....	9,100	.....	9,100
Wool, sheep.....pounds...	31,584	.....	248,800	280,384
Sundries.....value in Haikwan taels...	20,633	8,195	.....	28,828
Total value in Ha kwan taels.....	5,724,816	260,180	1,292,710	7,277,706

The foregoing table gives only the returns of those exports that have passed through the customs under the foreign inspectorate and is but a small amount compared with that which comes under cognizance of the native customs and likin, as will be seen by examining the export tables of silk from Shanghai, that silk nearly all having passed on to Shanghai from this district. The same discrepancies prevail more or less throughout the list

of exports. Of the 32,572,733 pounds of black tea and 386,736 pounds of green tea exported from Fuchau last year, about one-half was grown in this consular district and carried into Fuchau, but in the last year a strong effort has been made to ship the teas from their natural outlet, Wênchow. Several firms have just started in that city for the express purpose of firing tea and of making Wênchow the tea port instead of Fuchau.

IMPORTS INTO THE NINGPO DISTRICT.

The following table shows the importations (quantities) of foreign goods into the consular district of Ningpo (of which Hangchow is the chief city) for the year 1894 (opium not included):

Articles.	Ningpo.	Wênchow.	Sent in overland.	Total.
Cotton goods.				
Shirting, gray ..... pieces	338,900	22,160	.....	361,060
White ..... do	44,098	6,577	.....	50,675
Irish ..... do	28,748	.....	.....	28,748
Dyed and brocaded ..... do	1,940	613	.....	2,533
T cloth:				
32-inch ..... do	46,974	15,100	.....	62,074
36-inch ..... do	19,556	.....	30	19,586
36 inches by 48 yards ..... do	12,605	.....	.....	12,605
Drills:				
English ..... do	3,275	990	.....	4,265
Dutch ..... do	585	.....	.....	585
American ..... do	12,603	315	.....	12,918
Jeans:				
English ..... do	7,465	.....	.....	7,465
American ..... do	200	.....	.....	200
Sheetings:				
English ..... do	9,305	.....	.....	9,305
American ..... do	13,350	.....	.....	13,350
Chintz, furniture ..... do	9,908	.....	.....	9,908
Cotton prints ..... do	.....	1,404	.....	1,404
Printed cloths ..... do	1,884	.....	.....	1,884
Printed twills ..... do	180	.....	.....	180
Turkey red ..... do	4,035	700	.....	4,735
Turkey cambric ..... do	1,100	1,614	.....	2,714
Cotton lastings ..... do	4,628	210	.....	4,838
Cotton Italians, plain and figured ..... do	4,402	310	.....	4,712
Dyed twills ..... do	1,408	.....	.....	1,408
Velvets ..... do	2,069	.....	.....	2,069
Velveteens ..... do	192	.....	.....	192
Muslin ..... do	3,689	.....	.....	3,689
Handkerchiefs ..... dozen	10,518	.....	.....	10,518
Cotton, Japanese ..... do	688	.....	.....	688
Towels ..... do	6,992	.....	.....	6,992
Taffachellas ..... pieces	1,518	.....	.....	1,518
Cotton metz cords ..... do	1,780	1,480	.....	3,260
Cotton elastic cloth ..... do	1,828	.....	.....	1,828
Cotton flannel:				
Canton ..... do	6,915	.....	.....	6,915
Japanese ..... do	640	.....	.....	640
Cotton crape ..... do	792	.....	.....	792
Japanese cotton cloth ..... do	1,305	.....	.....	1,305
Japanese cotton crape ..... do	1,435	.....	.....	1,438
Cottonades ..... do	1,377	.....	.....	1,377

Imports into the Ningpo district—Continued.

Articles.	Ningpo.	Wênchow.	Sent in overland.	Total.
Cotton goods—Continued.				
Cotton yarn:				
English.....pounds...	108,000	.....	.....	108,000
Indian.....do.....	1,131,333	54,800	.....	1,186,133
Japanese.....do.....	183,533	6,800	20,000	210.333
Cotton thread.....do.....	9,105	.....	.....	9,105
Woolen goods.				
Camlets, English.....pieces...	2,195	1,030	.....	3,225
Lastings, plain.....do.....	1,180	240	.....	1,420
Long ells.....do.....	418	320	.....	738
Spanish stripes.....do.....	1,630	462	.....	2,092
Cloth, broad, medium, and habit.....do.....	538	96	.....	634
Lusters and orleans.....do.....	100	280	.....	380
Union lastings.....do.....	30	.....	.....	30
Blankets.....pairs...	109	.....	.....	109
Flannel.....pieces...	40	.....	.....	40
Italian cloth.....do.....	3,980	243	.....	4,223
Woolen cord and yarn.....pounds...	10,345	2,146	400	12,891
Miscellaneous piece goods.				
Canvas.....bolts...	1 0	.....	.....	100
Gunny cloth.....pieces...	2,903	.....	.....	2,903
Metals.				
Iron:				
Nail rod.....pounds...	2,662,185	.....	1,473,100	3,135,285
Bar.....do.....	337,313	.....	242,933	580,246
Hoop.....do.....	25,923	28,756	2,933	57,612
Galvanized.....do.....	181,752	.....	1,733	183,485
Sheets and plates.....do.....	212,731	.....	1,066	222,797
Wire.....do.....	119,466	939,913	52,800	1,112,179
Pig and kentledge.....do.....	10,264	.....	4,533	14,797
Old.....do.....	1,500,861	.....	225,866	1,726,727
Old iron wire.....do.....	851,621	135,000	10,000	996,621
Iron anchors and chains.....do.....	74,169	.....	.....	74,169
Ironware, miscellaneous.....do.....	22,276	.....	135,333	157,609
Horseshoes, old.....do.....	.....	.....	24,666	24,666
Wire rope, old.....do.....	.....	.....	4,000	4,000
Hoop, old.....do.....	.....	.....	2,933	2,933
Old scrap.....do.....	.....	.....	98,000	98,000
Tin:				
In slabs.....do.....	3,813,984	4,536	865,500	3,884,010
Refuse.....do.....	60,190	.....	.....	60,190
Plates.....do.....	.....	.....	7,200	7,200
Lead, in pigs.....do.....	1,208,129	47,170	49,733	1,305,032
Copper:				
Sheet.....do.....	14,751	.....	.....	14,751
Wire.....do.....	9,914	.....	.....	9,914
Slabs, Japan.....do.....	30,889	44,653	.....	75,542
Yellow-metal sheets.....do.....	25,843	.....	.....	25,843
Brass wire.....do.....	14,533	.....	.....	14,533
Steel.....do.....	353,523	.....	40,000	393,523
Plates.....do.....	.....	26,213	.....	26,213
Mild.....do.....	283,333	.....	.....	283,333
Bars.....do.....	.....	27,060	.....	27,060
Quicksilver.....do.....	3,733	.....	.....	3,733
White metal.....do.....	27,225	.....	.....	27,225
Compound tin.....do.....	76,451	.....	48,533	814,984
Zinc.....do.....	40,688	.....	3,333	44,021
Metals, unclassed.....do.....	42,701	.....	.....	42,701

Imports into the Ningpo district—Continued.

Articles.	Ningpo.	Wênchow.	Sent in overland.	Total.
Sundries.				
Agar-agar and seaweed.....pounds...	1,061,380	47,806	92,866	1,202,052
Awabi.....do.....	8,832	4,893	.....	13,725
Bark, yellow.....do.....	.....	.....	2,133	2,133
Bed hangings.....dozen...	1,320	.....	.....	1,320
Betel nuts.....pounds...	26,000	.....	.....	26,000
Husks.....do.....	75,022	.....	.....	75,022
Beche de mer:				
Black.....do.....	116,165	3,513	6,800	126,278
White.....do.....	123,555	20,071	20,266	163,892
Birds' nests, third quality.....do.....	.....	.....	133	133
Boxes, fancy.....taels..	.....	610	.....	610
Borax.....pounds...	4,719	.....	.....	4,719
Braid.....boxes...	22,661	15,444	28,800	66,905
Buttons, brass.....gross...	2,373	.....	.....	2,373
Camphor:				
Japan.....pounds...	2,572	.....	.....	2,572
Varoos.....do.....	48	.....	.....	48
Refuse.....do.....	150	.....	.....	150
Candles.....boxes...	3,433	.....	.....	3,433
Canes, tsengchu.....pounds...	117,357	.....	.....	117,357
Cardamom:				
Husks.....do.....	16,663	.....	.....	16,663
Superior.....do.....	10,086	.....	.....	10,086
Inferior.....do.....	35,268	.....	266	35,534
Cement.....do.....	326,510	.....	.....	326,510
Cinnabar.....do.....	1,520	.....	.....	1,520
Clams, dried.....do.....	182,094	.....	.....	182,094
Clocks.....number...	511	.....	.....	511
Cloves.....pounds...	7,831	.....	.....	7,831
Coal.....tons...	2,881	.....	9,652	12,533
Cockles.....pounds...	106,133	19,726	.....	125,859
Coir canes.....do.....	.....	.....	204,403	204,403
Coke.....tons...	79	.....	25	104
Campoy.....pounds...	47,223	.....	800	48,023
Crocodile scales.....do.....	3,811	.....	.....	3,811
Cutch.....do.....	10,611	.....	.....	10,611
Dyes, aniline.....taels...	16,394	8,027	266,266	296,687
Fans:				
Paper.....number...	68,537	.....	.....	68,537
Palm leaf.....do.....	340,045	126,636	103,400	570,071
Unfrimmed.....do.....	802,700	341,800	2,284,000	3,428,500
Fish and products.....pounds...	12,578	.....	.....	12,578
Flint stones.....do.....	178,309	.....	90,933	269,242
Flour, American.....do.....	938,841	.....	.....	938,841
Gensing:				
Japan.....do.....	12,005	7,489	.....	19,494
American.....do.....	128,733	369	.....	129,102
Unclassed.....do.....	2,048	2,970	.....	5,018
Glass, window.....boxes...	3,539	415	405	4,359
Glassware.....taels...	3,810	875	800	5,485
Glue, cow.....pounds...	9,963	.....	.....	9,963
Gum olibanum.....do.....	44,387	.....	.....	44,387
Horns:				
Cow.....do.....	.....	.....	2,266	2,266
Deer.....do.....	23,799	1,600	.....	25,399
Rhinoceros.....do.....	448	.....	.....	448
Indigo.....do.....	601,369	.....	164,000	765,369
Isinglass.....do.....	32,028	3,736	3,666	39,428
Lamps.....number..	19,344	20,780	.....	40,124

Imports into the Ningpo district—Continued.

Articles.	Ningpo.	Wênchow.	Sent in overland.	Total.
Sundries—Continued.				
Lead:				
White.....pounds...	36,793	85,980	1,333	124,106
Yellow.....do.....	.....	.....	7,866	7,866
Leather.....do.....	78,042	.....	.....	78,042
Lichens, dried.....do.....	.....	.....	9,900	9,900
Looking glasses.....number...	21,358	.....	.....	21,358
Lung ngans, dried.....pounds...	24,088	.....	1,700	25,838
Machinery.....taels...	3,681	.....	.....	3,681
Mangrove bark.....pounds...	6,168,357	.....	1,600	6,169,957
Matches:				
European.....gross...	22,188	.....	.....	22,188
Japanese.....do.....	235,457	36,600	102,300	374,357
Medicines.....taels...	6,759	.....	.....	6,759
Milk (condensed) in tins.....dozen...	1,058	.....	.....	1,058
Mushrooms.....pounds...	43,928	.....	133	44,061
Mussels, dried.....do.....	103,033	9,450	8,533	121,016
Needles.....thousands...	38,924	8,440	.....	47,364
Oil, kerosene:				
American.....gallons...	1,489,260	218,000	1,851,450	3,966,610
Russian.....do.....	97,350	303,040	10,700	411,090
Tinned at Shanghai.....do.....	314,380	.....	.....	314,380
Peruvian.....do.....	.....	.....	45,800	45,800
Paint, green.....pounds...	9,990	.....	4,000	13,990
Paper, first quality.....do.....	115,014	.....	43,866	158,880
Peel, orange.....do.....	.....	.....	4,333	4,333
Pepper:				
Black.....do.....	87,145	5,986	7,066	100,197
White.....do.....	14,896	5,789	1,066	21,751
Prawns, dried.....do.....	162,533	5,789	34,266	202,588
Putchuck.....do.....	36,940	.....	.....	36,940
Raisins.....do.....	10,906	.....	.....	10,906
Rattan:				
Whole.....do.....	1,212,749	86,293	695,733	1,994,775
Split.....do.....	12,436	.....	.....	12,436
Safflower.....do.....	16,336	.....	.....	16,336
Sandalwood.....do.....	99,033	.....	184,533	283,566
Sapan wood.....do.....	647,428	32,268	333,860	1,013,556
Shark's' fins:				
White.....do.....	11,173	.....	266	11,439
Clarified.....do.....	6,835	.....	.....	6,835
Silk:				
Piece goods.....pieces...	193	.....	.....	193
Yarn.....do.....	1,600	.....	.....	1,600
Soap, common bar.....pounds...	471,900	.....	230,400	702,300
Stick-lac.....do.....	16,368	.....	4,000	20,368
Sugars:				
Refined.....do.....	.....	.....	170,933	170,933
Brown.....do.....	2,066,133	38,740	1,528,666	3,733,439
White.....do.....	14,019,241	420,137	1,394,400	15,833,778
Candy.....do.....	.....	.....	26,666	26,666
Sulphuric acid.....do.....	15,466	.....	22,400	37,866
Timber:				
Beams.....number...	242	.....	71	313
Planks—				
Hard.....do.....	1,529	.....	1,669	2,198
Soft.....square feet...	141,685	.....	12,214	153,899
Masts.....number...	27	.....	.....	27
Tin case, with mirrors.....gross...	1,045	.....	.....	1,045
Tender.....do.....	59,257	.....	22,133	81,390

Imports into the Ningpo district—Continued.

Articles.	Ningpo.	Wênchow	Sent in overland.	Total.
Sundries—Continued.				
Tobacco stalk.....pounds..	298,777	.....	2,800	301,577
Ultramarine.....do.....	.....	.....	400	400
Umbrellas, cotton.....number...	30,648	3,012	.....	33,660
Vermilion.....pounds...	22,660	4,241	.....	66,901
Wood:				
Camagon..... do.	583,158	.....	.....	583,158
Ebony.....do.....	241,542	.....	.....	241,542
Garoo.....do.....	800	.....	.....	800
Krangi.....pieces...	139	.....	.....	139
Puru.....pounds..	266,106	.....	.....	266,106
Rose and red.....do.. ...	176,946	.....	.....	176,946
Scale stick.....number ..	9,316	.....	.....	9,316
Worm tablets, in bottles.....dozen...	1,260	.....	.....	1,260
Sundries.....taels...	14,298	10,707	81	25,086
Total value in Haikwan taels.....	7,165 413	425,279	479.959	8,070,657

The year 1894 was anything but a favorable year for the trade of this district. Owing to the war, the port of Ningpo has been closed to shipping since the 1st of last August and the entrance to the harbor of Wênchow rendered dangerous by the torpedoes. Trade at one period was almost at a standstill. Nevertheless, American merchants will be able to form some idea from the list of imports of the needs of the district. There is no doubt but that the removal of the restrictions upon the importations of machinery alone will cause a tremendous impetus to trade.

I can not reiterate too often the necessity of the American manufacturer being prepared to enter the field. The opening of the great city of Hangchow alone will do more to increase that field than any other single event has done since China was entered by the foreign merchant.

PRINCIPAL IMPORTS.

I must content myself now with a few suggestions upon the various articles of import:

Candles.—The sale of candles would be increased if they were colored red. White is the Chinaman's color for mourning, and his abhorrence of white is perfectly natural under the circumstances. Last year, 1,626,843 pounds of candles were imported into Shanghai alone.

Clocks.—Clocks, if made with the hours marked in Chinese characters, would have an increased sale, for the marking of the face in English is a drawback for the vast majority of people, who would be inclined to buy if the hours were marked in their own language. The ornamental work should also be in keeping with his ideas; dragons, lotus flowers, etc., carved or painted on the clock, would catch his fancy. No matter how hideous they may be to us, we must remember that we wish to sell. The merchant at home does everything in his power to please his prospective customer; why not here?

Machinery.—Cotton machinery I have written of, in the year 1894, and in spite of the restrictions forbidding the importation of machinery, Shanghai imported 3,682 cotton gins, and to-day (June 27), I read that it is proposed to organize a large cotton mill in Shanghai under foreign auspices, with local capital—a forerunner of what is to come.

Canned goods.—Canned goods are having a great demand, and the sales will increase. Of condensed milk alone, there were 27,614 dozen tins imported into Shanghai in 1894. Chinese labels should be placed on the tins.

Cutlery.—Cutlery of all kinds, if made especially for this market, will sell.

Dyes.—Dyes are in demand, for the Chinese color everything, excepting in hot weather. White clothing is not worn; the cottons are dyed; prevailing color, blue.

Electric materials.—With plenty of water power, now going to waste, it seems probable that the use of electricity will be one of the results of the new order of things.

Flour.—Flour is rapidly gaining favor. The market can be extended. For fuller particulars, see my report on flour in CONSULAR REPORTS No. 165 (June, 1894), p. 301.

Window glass.—The erection of factories and godowns will call for immense quantities of glass. The Chinese are fast adopting the use of glass in their buildings.

India-rubber goods.—Garments, shoes, etc., made to conform to the style of the native dress would sell. See my report in SPECIAL CONSULAR REPORTS entitled India Rubber, p. 572.

Lamps.—Lamps of all kinds, especially the cheaper class, are in demand and with the ever-increasing use of oil the market is expanding.

Lead.—Red, white, and yellow leads are sold in large quantities now, and building operations soon to begin will increase the demand.

Mirrors.—Looking glasses must be small and cheap. Shanghai received 471,833 last year.

Needles.—The market for needles is large and constantly increasing. In 1894, 2,126,687,000 were brought into Shanghai.

Printing.—Printing and lithographic materials are in demand. When in Hangchow last year, I was surprised to learn that there was a printing office there.

Lumber.—There is a good market here for all kinds of lumber and there is no reason why the western coast of the United States should not be able to supply the demand. The Chinese are learning to appreciate American lumber. I have seen temples that had interior supports of Oregon pine.

Paper.—Paper of all kinds will be required, and I fancy that cheap wall paper will find a market in Hangchow, where the climate is not so damp as to forbid its use, as is the case on the coast. Many houses of the missionaries in that city have the walls papered.

Railway stock.—Railway plants and materials no doubt will be required.

Scales.—If the weights are marked on one side in Chinese numerals and

characters, scales will sell. The use of foreign scales is rapidly increasing, but as the computation is different from the Chinese, it is only the Chinaman who is more or less familiar with English that can understand them. Although there are scales on the market, made expressly for Chinese, the trade has not been pushed.

Machinery.—Silk and rice machinery of all kinds (see my remarks on machinery). Tea machinery for curing tea, for making boxes, etc., will be required.

Soap.—Soap is in good demand.

Toys.—Toys, especially the cheap mechanical toys, have a rapidly increasing sale.

Umbrellas.—Cheap cotton umbrellas will sell. The native kittysol is rarely seen now. Japan furnishes nearly all the umbrellas seen here. Over 300,000 were brought into Shanghai in 1894.

Watches.—Cheap watches are in demand, and the market can be increased.

Cotton towels and handkerchiefs can be sold here readily.

ARTICLES NOT SALABLE.

It will only be labor lost to endeavor to sell any of the following articles: Foreign-style boots, shoes, or clothing, American matches, carriages, road-making or agricultural machinery, etc.

JAPANESE COMPETITION.

Our merchants must bear in mind that they have to compete with the Japanese in every branch of trade, and the latter have a decided advantage not only in being near the market, but also because of the rates of exchange. The commissioner of customs for Ningpo, in his report for 1894, says:

> It is not surprising to find that there was a large increase in the trade in cotton yarn for domestic weaving, the importations in 1894 exceeding by 2,841 piculs (a picul is 133⅓ pounds) those of the year preceding, though still falling far short of those of 1892, and in connection with this article, it is a fact full of significance, that the importations included no less than 1,376 piculs of Japanese yarn and 660 piculs of Chinese. English cotton yarn has particularly ceased to be imported at Ningpo, and it seems likely that even Indian yarn will be more and more largely supplanted by yarn of Japanese and Chinese manufacture after the restoration of peace with Japan and with the completion of the numerous cotton mills contemplated or in course of erection in China.
>
> The importation of kerosene oil—1,900,990 gollons—was the smallest since 1889. Of the total importations, 1,489,260 gallons were American oil and 411,730 gallons were Russian. The latter included 314,380 gallons of tank oil repacked at Shanghai into tins without wooden cases. Owing to more favorable duty arrangements, the importation of this tank oil has come to be an important part of the trade in kerosene oil. * * * The Russian tank oil, owing to its frail packing, is consumed locally, and does not go into the interior.

ROUTES TO HANGCHOW.

The route to Hangchow from Ningpo is up the branch of the Yung River that flows by the city, called the Yu. There is deep water for about 40 miles, affected by tides. At the city of Yuyao it is necessary to pass over a "pa," or haulover, into a canal. After passing three or four of these

haulovers, and going into higher canals, we reach the town of Tahkwan, 75 miles from Ningpo. Here we leave our Ningpo boat and pass through Tahkwan, across the Ong River, walk about a third of a mile, when we reach the Shaoshing Canal, get into a native boat, and after passing through this magnificent artificial waterway, skirting many large cities, of which Shaoshing is the greatest, we reach the town of Sheshing, having traveled 65 miles in this canal. From Sheshing to the bank of the Tientang is a walk of 3 miles on the dikes built to keep the bore from flooding the land. As we see the city of Hangchow on the opposite side, one does not fail to be impressed by its wonderful beauty. The situation is all that could be desired, and in the days of Marco Palo, seven hundred years ago, it must have been truly a grand city, for, to-day, in spite of the neglect of centuries and the more recent and desolating ravages of the Taipings, it retains much of its ancient glory. It is without a doubt the richest city in the Chinese Empire. I have visited it on two occasions, and have often wondered that no effort had been made to throw open this prosperous mart to the trade of the world. Traveling by the slow native boats, Hangchow is four days' journey from Ningpo. With the introduction of steam, the distance will be covered in less than half the time.

From Hangchow to Shanghai, there is a daily line of steam launches run by the natives. This line was forced upon the officials. At first, they opposed it in every way possible; of late, they tolerate it, as they find it more convenient to travel by than the old method of boats propelled by men. The distance between Hangchow and Shanghai is almost 150 miles, and the time occupied by native boats is four days; by steam launch, from twenty-four to thirty-six hours. The fare is from $1 to $2 in Mexican money (from 50 cents to $1 in United States gold).

The population of Hangchow is about 800,000. The best locality for a foreign settlement would be the northern suburb, which has about 100,000 people, at a place called Sing Ma-deo (New Horse Head) about 2 miles from the north gate. It is there the officials stop and where the steamers' landing is. The Chinese have picked it out as the probable place. There are some beautiful situations on the hills about the lake that would be much more desirable for residences.

Fresh water could be had with a little expense and enterprise. The carts and horses are no longer to be seen; man is the beast of burden, but the advent of machinery, and perhaps railroads, will change this.

Such is the city that is to be thrown open to the world in October next—the Kinsay of Marco Polo.

TREATY OF PEACE.

The treaty of peace between Japan and China stipulates:

China makes, in addition, the following concessions, to take effect six months after the date of the present act:

(1) The following cities, towns, and ports, in addition to those already opened, shall be open to the trade, residence, industries, and manufactures of Japanese subjects, under the

same conditions and with the same privileges and facilities as exist at the present open cities, towns, and ports of China: Shashih, in the province of Hupeh; Chungking, in the province of Szechuan; Suchow, in the province of Kiangsu; Hangchow, in the province of Chêkiang. The Japanese Government shall have the right to station consuls at any or all of the above-named places.

(2) Steam navigation, for vessels under the Japanese flag for the conveyance of passengers and cargo, shall be extended to the following places: On the Upper Yangtze River, from Ichang to Chungking; on the Woosung River and the canal, from Shanghai to Suchow and Hangchow. The rules and regulations which now govern the navigation of the inland waters in China by foreign vesssels shall, so far as applicable, be enforced in respect of the above-named routes until new rules and regulations are conjointly agreed to.

(3) Japanese subjects purchasing goods or produce in the interior of China or transporting imported merchandise into the interior of China shall have the right, temporarily, to rent or hire warehouses for the storage of the articles so purchased or transported, without the payment of any taxes or exactions whatever.

(4) Japanese subjects shall be free to engage in all kinds of manufacturing industries in all the open cities, towns, and ports of China, and shall be at liberty to import into China all kinds of machinery, paying only the stipulated import duties thereon.

All articles manufactured by Japanese subjects in China shall, in respect of inland transit and internal taxes, duties, charges, and exactions of all kinds, and also in respect of warehousing and storage facilities in the interior of China, stand upon the same footing and enjoy the same privileges and exemptions as merchandise imported by Japanese subjects into China (China Gazette, June 6, 1895.)

IMPORTANCE OF HANGCHOW.

Already the importance of that stipulation is noted, for the Shanghai Mercury, of June 10, says in a leading article:

The opening of Soochow and Hangchow will, doubtless, produce a revolution in foreign trade in this port, and this is a thing that it behooves us to be well prepared for. It is doubtful whether even yet our representatives or our merchants have been able to grasp the situation. In two particulars this innovation will show itself prominently; namely, the inland water communications and transit-pass regulations, and a further natural consequence of these two changes should be a reform of the likin taxation. All these achievements are decidedly in favor of foreign trade. * * *

Under the Li-Ho treaty, then, two thickly populated and wealthy cities in the neighborhood of Shanghai become opened to foreign trade. Kiangnan and northern Chêkiang export the greatest in bulk, as well as value, of all the provinces of China, and Hangchow and Soochow are the places of storage, and thereby the main centers of this trade.

Hangchow is the terminus of that great artery of eastern China generally called the Grand Canal, and Soochow is placed, spider like, at the center of a widely ramifying net of water communications.

Under the new treaty, both these places become freely accessible by steam, or otherwise, to Shanghai, within, say, ten to twenty hours.

The North China Daily News, of June 7, 1895, says:

It is difficult to believe that the opening of Soochow and Hangchow to foreign trade, with the right to run steamers on the Wusung River and Grand Canal, will not appreciably check the advance of Shanghai. The new ports promise to offer even greater facilities than Shanghai does for the establishment of filatures, cotton mills, and other manufactories. They are in the center of the silk and cotton country, with abundant labor, cheaper land, and a lower

cost of living. Shanghai promised to become the Manchester, as it is the Liverpool, of the far East. It is quite on the cards that the new inland ports will become the Manchester and Leeds, and Shanghai be only the shipping port.

Are our merchants going to take advantage of this, the greatest opportunity ever offered in the China trade?

JOHN FOWLER,

NINGPO, *June 28, 1895.* *Consul.*

NEW STAFFORDSHIRE POTTERY KILNS.

Perhaps in no department of manufacture have changes in methods been so few and far between as in the production of pottery. The potter's wheel remains the same to-day as it was in the most remote time. Baking or firing ware is coeval with the first shaping of clay into vessels, and although a process of hardening clay without heat has lately been invented and dignified with the brand "patented," it will require many improvements before it can be of the slightest utility.

Long ages passed before machinery usurped any of the hand methods of the ancients, and to-day there are many potteries that fashion clay ready for firing as men did five hundred years ago.

Improvements in the quality of the ware, both in the biscuit and glaze, together with constant changes in ornamentation, have engaged the most serious attention for many years. Changes in body are strictly trade secrets, and while much depends on firing in order that both biscuit and glaze may be durable, and while methods of firing are always open to inspection, the mixing of the ingredients that make up the improved body is always carefully guarded.

Compare the best body to-day with the same of four years ago, and what a change! Now, there is a lightness, a purity, a whiteness in earthenware that formerly was found only in china, and, except for transparency, that always goes with the latter, much of the former may be mistaken for china.

This is the result of individual enterprise and skill, and it is impossible to gain the secret and lay it before the public. Shape and ornamentation are usually copyrighted, and in this department the skill of the artist is constantly employed. But, as stated before, improvements in firing ware, in its three stages, are open to inspection, and I have had an opportunity to investigate two new kilns for firing biscuit and glost ware and one for enameling that bid fair to greatly reduce the cost of production in this department.

The elements of cost in firing are five, viz, labor, fuel, time, waste of saggers, and breakage of ware. Anything that will greatly reduce any or all of these elements must reduce cost, and, therefore, the selling price.

The style of oven in general use is shaped like a round pyramid, vaulted at the top and covered by a chimney. The size will vary from 19 feet wide

and 20 feet high. The saggers, in which ware is placed, are arranged one over the other in columns called "bungs," these extending to the top of the oven. Around the bottom of the oven are several openings in which fires are built. These flues join at the center. Some ovens are only fitted with an up draft, others are built with a down draft as well. This firing occupies from forty to sixty hours.

It will readily be seen that any process that shortens the height of the bungs must diminish labor, as it takes much longer to place the last 10 feet than the first 10. The same will hold good in taking the ware out of the oven. While workmen handle the filled saggers skillfully, yet the chance of breakage is greatly lessened by low placing. Again, the breakage of saggers in the lower part of the bungs is caused, largely, by the great weight, and short bungs must reduce this element of waste.

To economize heat, however, is the great study of the practical potter in this department, and all the requirements above enumerated that bring about an economization of labor, time, waste, and fuel have been admirably met in the following kiln now in use in this district.

Kiln No. 1.—This kiln consists of four detached ovens, rectangular in shape, being 28½ feet long, 19 feet wide, and 21 feet high. The four ovens are connected with one chimney, 90 feet high, by underground flues, and also by flues from the top of each chamber. The inner measure of the ovens is 21½ feet long, 14 feet wide, and 15 feet high; the remainder of height being used for fire box. On one side of each fire box are five fire mouths. Thence, the heat is conducted through flues or passages beneath the floor of the oven to the interior, and when firing, or baiting, the smoke generated may be released through the upper flues into the chimney; and by closing the up-draft orifices in the crown of each oven by dampers and opening the dampers in the lower flues connecting with the chimney, the heat will be drawn downward between the piles or bungs of saggers containing the ware and pass through pipes in the floor of the oven to the lower flues connected with the main chimney.

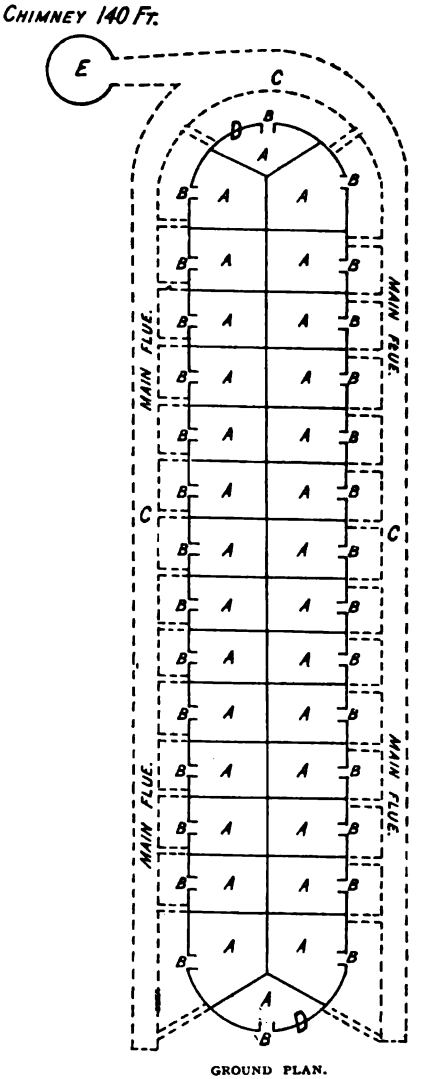
Although fires are only fed on one side of each oven, the heat can be so regulated by the system of flues and dampers that the opposite side of the chamber can be made the hottest if required.

The "trials" are the same as the ordinary method.

The capacity of each oven is equal to an ordinary 18-foot oven for biscuit ware and a 17½-foot oven for glost ware.

This kiln has been in successful operation for six months and the saving over the ordinary process of firing has been computed as follows, in percentages: Fuel, 33⅓; labor, 10; time, 12; saggers, 35; biscuit breakage, 50; less "seconds" glost, 50. Added to these advantages is the smoke-consuming arrangement of the kiln, which all manufacturers appreciate.

Kiln No. 2.—This kiln is either for biscuit or glost firing, but will principally be used for the former. A saving is made in fuel, labor, breakage, and saggers, but between the placing and removing of the ware, time is lost.

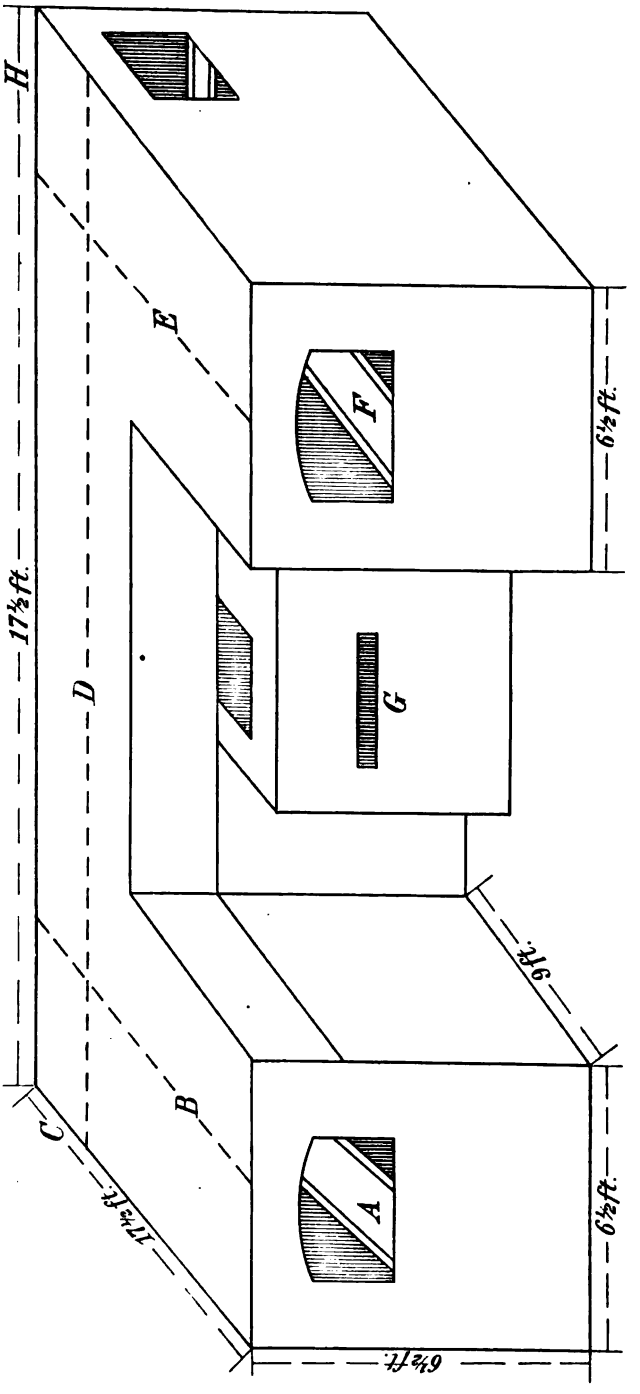


GROUND PLAN.

This oven is practically a building 180 feet long, about 24 feet wide, and two stories high, with circular ends. The lower story is the kiln. A wall divides it lengthwise, but not cutting the circular ends, and thus the oven is a vast arched chamber 380 feet in circumference, 10 feet high, and 10 feet wide. This chamber is divided into 30 compartments, marked *A*, by loose brick walls extending about halfway up. Into each of these compartments is an exterior opening about the size of an ordinary doorway, marked *B*. Surrounding this building or oven is a flue marked *C*, built underground and distant 2 feet from the outer wall, marked *D*. The flue is not endless, but is shaped like the letter U. Where the flue passes around one of the circular ends of the kiln, it is joined to a detached chimney 140 feet high, marked *E*. A sectional flue joins each compartment with the main flue and each sectional flue is fitted with a damper. By closing all the dampers but those at one terminus of the flue it will be seen that heat, originating in any part of the oven, must travel to the point of escape. Thus the greatest economy in fuel is reached.

The process of placing and firing the kiln is as follows: Pack any five chambers with saggers filled with ware, as in the ordinary biscuit oven. As the bungs are only 10 feet high, the labor involved is much less than formerly. When the five chambers are placed, start a fire in the first two compartments. To stop the back draft, a paper partition is fixed against the saggers in the fifth compartment. By the time three more chambers are packed and a new paper wall erected at the last chamber, the former will have burned away. The sectional dampers are regulated to drive the heat through the successive chambers as fast as filled. Two fires will bring the ware to "red heat" three compartments away. As fast as the chambers are filled, advance the fires, always keeping the fire five chambers back. The fire is kept in each compartment twenty-four hours. When the fifteenth chamber is reached the ware in the first is ready to be removed. An entire circuit is made in two weeks, and one week elapses between the placing and removing of the ware, thus losing time as compared with ordinary methods. The chamber is endless, as before stated, and thus the work is in a circle, placing in advance, firing and removing, and yet the work joins as in a circle, so there is practically neither beginning nor ending, except as regards the finishing of the ware. The method of determining when the ware is sufficiently fired or "baked" is similar to that employed in ordinary kilns. There are two openings from each compartment into the second story, and these short chimneys can be opened and closed at will, and are for the purpose of accelerating draft, cooling the kiln, and keeping it "sweet." The floor of the second story is of clay about a foot thick. This room is for storing green saggers. Surrounding the kiln is a room 15 feet wide, built with a half roof, and covering only the lower story. This room is for storing ware and saggers.

The estimated saving of this kiln is as follows: Labor, 25 per cent; fuel, 50 per cent; saggers, 50 per cent; and breakage, 15 per cent.


H
17½ ft.
E
D
B
C
11½ ft.
F
G
A
6½ ft.
9 ft.
6½ ft.
6½ ft.

Enameling kiln.—The new enameling kiln, especially adapted for china, now in use here, effects a revolution, on a small scale, alike as respects economy in production, beauty of finish, and prevention of smoke. The great delays and risks incurred in finishing decorated ware add immensely to the potter's anxiety, as well as to the cost of production. While a kiln is being packed under the old process, it is necessarily idle. A considerable number of hours are employed in getting up the necessary heat, and an equal number in allowing the ware to cool before it can be handled and removed. Under the new process, the kiln may be kept, if required, in constant use, while the ware to be fired travels through it in constant procession. The construction of the new enameling kiln and the modes of handling the ware are, of course, entirely different from those now in use.

The diagram (page 84) partially represents the new kiln, with the dimensions marked on each side:

G is the fire box, from which flues run through the different parts of the kiln.

The decorated goods, packed in traveling baskets made of iron sides with a base of fire clay, are duly loaded and placed in the opening *A*, and are pushed along by a screw through the chamber of ever-increasing temperature marked *B*, until it reaches the point *C;* from *C* a screw propels the baskets through the chamber marked *D*. This chamber, like the first, constantly increases in temperature, until, at its central point, a sufficient heat is reached to complete the process. The ware is not exposed to this extreme heat a moment longer than is necessary to fix the color. The automatic journey is then continued to the point marked *H*, when the laden baskets are pushed by another screw through the chamber of gradually diminishing temperature, marked *E*, and is finally taken out of the opening *F* cool enough to handle.

The time ordinarily required for a basket of ware to perform the entire journey is one hour, but that time may be lengthened or lessened as the ware may require.

The saving of coal is from 70 to 80 per cent. One German firm reports a saving of $1,200 in fuel and labor in one year, and that a kiln of the dimensions given above will perform the work of five or six ordinary kilns. In addition to this, the luster, or finish, of the ware is superior to that fired by the ordinary method.

All potters will appreciate the ease with which a small order or a set of samples can be finished by this process.

It must be particularly noticed that this kiln is, as yet, only successful in the color firing on china.

WENDELL C. WARNER,

TUNSTALL, *December 17, 1895.* *Consul.*

LABOR-SAVING MACHINE FOR POTTERS.

I inclose herewith an extract from the Staffordshire Daily Sentinel on the subject of "Illingworth's multiple china-casting machine." The machine is creating considerable discussion among potters in this consular district, and should be of interest to china manufacturers is the United States.

WENDELL C. WARNER,

TUNSTALL, *July 15, 1896.* *Consul.*

[From the Staffordshire Sentinel]

ILLINGWORTH'S "MULTIPLE" CHINA-CASTING MACHINE.

The self-evident truth that "time means money" may be applied with exactitude to the manufacture of pottery of all kinds in the present day. Indeed, it is absolutely imperative that the greatest economy in both must be exercised in every branch of the trade to successfully compete with the French and German manufacturers of pottery. In the china, or porcelain, part of the industry it has long been felt, at any rate during the present decade, that some adaptation of mechanical science should be advantageously applied in its production, as has so successfully been accomplished with machinery in the manufacture of earthenware. At the same time, it must be taken into consideration that the English china body is so essentially different in its nature to the earthenware one that we scarcely expect to see an identical use of the same kind of machinery in both trades. Still, to take the first application of the filter press as an instance, the difficulties of dealing with the porcelain body were surmounted, and from this there is every hope that we may eventually see great results successfully accomplished. As a first edition of this hope of ours, it is clearly demonstrated that such pieces as tea and breakfast cups, bowls, cream jugs, and, indeed, any articles circular in form may be cast by the mechanical means afforded by the machine now noticed in a manner at once economical, both as regards time, trouble, and expense. The "multiple" casting machine is the patented invention of Mr. William Illingworth, of Fenton. The extreme simplicity of construction and the easy manner it can be worked will, without doubt, lead to its general adoption by the trade—a circumstance, the fulfillment of which will be doubtless gratifying to the inventor, of whom we may say, en passant, that this is by no means the first time he has endeavored to benefit the staple industry by his ingenuity. The "multiple" casting machine has been devised not only with the intention of saving time and labor, but also as a means of creating an uniformity in the strength of the articles made, for the proper use of the machine will not admit of any variation in thickness. The patent may be described as both novel and ingenious in its conception; by its instrumentality, too, it is quite possible to turn out ten pieces of china in exactly the same time that is now taken in making a single piece, an appreciable diminution in the cost of production. Mr. Illingworth's casting machine is triangular in form, and its practical utility is not a little enhanced by the comparatively small space it occupies in a manufactory. It is mounted on a vertical shaft, either attached to the floor or ceiling of the workshop, as the case may be. In near proximity to this shaft there is a cistern or reservoir for the slip, which, by an ingenious method, to be described hereafter, is kept at one consistency whenever required for use. Under this primary ark there is a series of stopcocks, regulating the flow of slip into the filling trough, or box, immediately above the set of molds to be worked. This filling trough, by the

turning of a lever, which acts on a single form of mechanism, is capable of being either raised or lowered to any angle, as the nature of the work may require. To the trough last mentioned, there is attached a series of double-lipped spouts, each provided with a small piece of wire gauze, to prevent impurities entering the molds. The triple set of racks for the reception of the molds is carried by bearings upon brackets at the end of three arms, thus forming a frame, affixed to a sleeve, free to rotate on the central pillar, and so arranged that by turning to a given distance, each of three series of molds are successively brought under the spouts of the filling trough. So that the molds may be retained in their proper position in the racks while being reversed to empty out the superfluous slip, which latter operation is accomplished by the turning of a double handle, there is provided an arrangement of arms fixed to subsidiary brass shafts operated by a bar, which, when pressure is borne on the molds, is secured by a spring catch. The method adapted for blunging, or stirring the slip in the upper ark, is ingenious; in connection with the primary or vertical shaft, there is an arrangement of revolving stirrers fixed on arms, which are automatically set in motion each time the mold racks are moved. This, with the lower ark for the superfluous slip, and the force pump for transferring the latter to the upper ark, completes the mechanical part of the invention.

The application of the machine to china casting may be thus briefly described. A set of molds are placed in each of the three racks, one of them is rotated until it comes immediately under the filling trough, which is then inclined to the requisite position by the movement of a lever, so that its contents freely flow into the molds; when the latter are filled, the trough is returned to its original position. The first set of molds having been filled, its place is taken by the second and eventually by the third; meanwhile, the required thickness of slip has adhered to the molds in the first set, which are then turned over to allow the superfluity to be poured into the lower ark. It will, therefore, be seen that, with the triple series of molds, a filled set in one rack can be allowed to stand until the clay is set, while the other two are being either filled or replaced. The machine is so arranged that as many as thirty molds can be used at once, or, if needful, a lesser quantity. We can not refrain from complimenting Mr. Illingworth on the patience and technical knowledge which he has undoubtedly bestowed on his invention.

SAXON LAND CREDIT ASSOCIATION.

I have the honor to inclose herewith a translation of the rules and regulations of the Sachsen Landwirthschaftlichen Creditvereins, or, translated, the Saxon Land Credit Association.

For years, I have been endeavoring to find some credit system that would bring our farming community into closer relations with the capitalist, to their mutual benefit.

I have examined the Reifeisen system, probably the father of the Landwirthschaftlichen Creditvereins, which did much good to the land interest of Germany, but, owing to lack of proper Government control, did also much harm, for, in some instances, the officers proved dishonest, involving the ruin of many of its members.

The Sachsen Landwirthschaftlichen Creditvereins, being under control and constant supervision of the Government, makes such a disaster much more difficult, if it does not preclude it.

After a thorough study of the above system, I am convinced that the same plan of organization may be adopted in the United States, where I believe it

will flourish as it has in Saxony. The mortgage certificates of this organization, par value 100 marks, are now quoted at 102.65 marks for the 3½ per cent and 103.80 marks for the 4 per cent certificates. This is a good indication of the confidence the Saxon people have in the association.

The farming people of the United States, when they wish to borrow, especially in the West and South, pay a very high rate of interest. I am not writing of the great landed proprietors, who have the best borrowing facilities, but the small farmer, who has probably expended his entire capital in the purchase and equipment of his farm and finds he must borrow from $100 to $500 until he can market his crops. It is to this class that such an association will be of most benefit, for through its agency, he is at once put in communication with the great financial centers, where he can obtain the required advance at the lowest possible interest, whereas at present he must often pay a disastrous amount to the local banker or money lender.

The cry for cheap money that is sounding over the West and South is the same cry that went up from the German landowner and farmer, and they were only relieved by mutual cooperation and the formation of the present land credit association; the same can be done in the United States to the certain benefit of the farmer and capitalist.

I believe that the financial associations and the individual capitalist would be glad to invest their money in the mortgage certificates of such an organization under proper control and supervision.

The association has proved a blessing in Germany.

Revised Regulations of the Agricultural Loan Association in the Kingdom of Saxony.*

First Section—General Rules.

1. *Name.*—The Agricultural Loan Association in the Kingdom of Saxony is an association acknowledged as a judicial person by royal decree of the 27th of April, 1866.

2. *Purpose.*—It purposes to allow its members loans under its regulations.

3. *Means.*—The capital to start the association is obtained from subscriptions to stock, receiving funds as a savings bank, and, generally, doing a banking business.

4. *Headquarters.*—The headquarters of the association are in Dresden, and the society is under the jurisdiction of the royal law bureau in the district court there or will be under that of the court which is to replace the former in future.

5. *Membership.*—Any owner of an estate in the Kingdom of Saxony who is of age, independent, and capable of disposing of his property, and who has not been punished for dishonorable crimes, can apply for membership in the association as an ordinary member. The member can be male or female, corporations or communities, which are acknowledged to be persons in law. Extraordinary members are admitted to the association under the regulations and conditions in section 13. All societies or communities, political or otherwise, which have obtained membership are to be regarded as ordinary members, without regard to the estate.

6. *Notification.*—Whoever wishes to be admitted to the association must notify the board of directors (paragraph 91), and prove that he is eligible for membership (paragraph 5), and declare that he will in all things submit absolutely to the regulations of the association.

* As summarized by Commercial Agent Peters.

7. The applicant for membership is admitted upon the recommendation of the committee on membership and receives, at the time of his election, an account book (paragraph 16), receipt for which must be in writing. The committee on election is responsible to the board of direction.

8. *Rejection.*—The committee on elections can reject application for membership if they believe the applicant ineligible or that his admission would be against the interests of the association. The applicant for membership can then appeal to the board of direction and the general assembly.

9. *Retirement.*—Any member who has not used his credit or repaid his loans, may retire at the end of any year, first giving a warning of at least three months. The notice of his intention to sever his connection with the association must be in writing to the committee of election, who must acknowledge it. Membership expires on the death of the member, but the rights reserved to the association remain (paragraph 11).

9*a*. If the dissolution of the association has been resolved, or the liquidation of the affairs of the association is found necessary, no member is allowed to retire.

10. *Expulsion.*—Any member can be expelled from the association if he has, in the judgment of the committee of election, forfeited his rights of membership, or if he has become a bankrupt, or not fulfilled his engagements to the association, or if the member is unworthy of trust. The committee on elections must state to the board of direction why the member has been expelled. The member has the right to appeal from the rulings of the committee of elections to the board of direction and the general assembly.

11. *Liability of a retired member.*—Every retired member is liable to the association for a year after his retirement for engagements entered into by the association up to the time of his retirement. The retired member has no voice in the actions of the association during this time. This applies also to the heirs of a deceased member.

One year from the date of the member's resignation, or one year after the death of a member, his accounts will be closed.

The interest of the retired member in stocks and dividends which were not called in will be paid on the return of his account or credit book (paragraph 16) a year after the closing of the accounts, with interest of 4 per cent per annum.

The retired member or his heirs can not lay any further claim to the property or interests of the association and have no share in the rest of the capital of the association (paragraph 102).

In case of the dissolution of the association within the year in which the retired member is still answerable, the liability of the retired member shall continue beyond the year until the liquidation of the association is finished.

THIRD SECTION—RIGHTS AND DUTIES OF THE MEMBERS.

12. *Rights.*—Every member is entitled—

(*a*) When resolutions are taken on the affairs of the association, to give his vote at the general assembly and to move that the general assembly shall be held in the manner stated in paragraph 84.

(*b*) If he can fulfill the regulations of the association (paragraphs 19, 31, and 35), to request a loan from the association for a certain time.

(*c*) Every member has a share in the net profits of the association in proportion to the stock he has.

13. *Duties.*—Every member is obliged—

(*a*) To pay an entrance fee (paragraph 14).

(*b*) To hold stock of the association (paragraph 15).

(*c*) To answer for the cost of administration and for all engagements of the association according to the manner detailed in paragraph 17.

(*d*) To obey all regulations of the association made or to be made.

(*c*) To promote the interests of the association in every possible way, as well as the good understanding with each and every member.

14. *Entrance fee.*—The entrance fee is fixed every year by a committee of the association (paragraphs 94 and 95); 50 per cent of the amount received goes to a sinking fund (paragraph 103) and 50 per cent to defray the office expenses (paragraph 102).

15. *Stock.*—Every member must—

(*a*) Have at least 100 marks in the stock of the association.

(*b*) The maximum amount of stock allowed to any one member is 1,500 marks, but no member may have less than 100 marks.

Members receive loans from the association in proportion to the stock they hold of the association.

A member holding stock amounting to 100 marks is entitled to a loan of 5,000 marks; 200 marks, 5,000 to 20,000 marks; 300 marks, 20,000 to 30,000 marks; 400 marks, 30,000 to 45,000 marks; 500 marks, 45,000 to 60,000 marks; 600 marks, 60,000 to 80,000 marks; 700 marks, 80,000 to 100,000 marks; 800 marks, 100,000 to 150,000 marks; 900 marks, 150,000 to 200,000 marks; 1,000 marks, 200,000 marks or more.

A member has a right to but one subscription, and the stock is untransferable.

In case of the estate changing owners, the stock of the former owner, or as much of it as exceeds the minimum contribution, can be transferred to the new owner, with the consent of the board of direction.

The dividends on the stocks are derived from the net profits of the association (paragraph 105).

16. *Account book.*—Every member receives an account book, in which the receipts from sale of stock is entered, as also the dividends. For this book the member pays 25 pfennigs. The entries in the account book are to be regarded as receipts from the association, and the possession of the account book is evidence that the member holding it is entitled to receive the dividends and capital.

Should this book be lost, the board of direction must at once be informed and the book will then be invalidated.

Under the authority of the board of direction the loss of the book is advertised in the principal papers requesting the finder to present himself before the board within the month. During the month the capital and interest due the member who has lost the account book can not be disbursed.

If the book is not found, the member losing the book will be furnished with a new book upon giving to the association a proper receipt, the new book to invalidate the lost one.

All rules of the association are printed in the member's account book.

17. *Liability.*—The liability of the members of the association is a joint and general one, under the following regulations, which must be observed:

(*a*) The general and joint liability of the members is to secure the credit of the association, but will not be used until all the available property and interests of the association have been exhausted (paragraph 81).

(*b*) After the property of the association has been exhausted the deficit remaining must be covered by the stock of the members.

(*c*) If the stock of the members does not cover the liabilities of the association, the members may be held to make further payments, pro rata, until the debts of the association are satisfied.

FOURTH SECTION—GENERAL CREDIT TO MEMBERS.

18. *Kinds of credit.*—Credit to ordinary members:

(*a*) Irredeemable mortages; loan not amounting to more than two-thirds of the value of the estate (paragraphs 46 or 47; see, also, paragraph 19).

(*b*) Irredeemable loans to communities or unions (paragraph 5) without mortgage, but under duly drawn obligations of the community (paragraph 31).

(*c*) Irredeemable loans or mortages on estates, amount of loan not more than two-thirds of the value of the estate.

(*d*) Time mortages on estates, value of mortage not more than three-fourths of the value of the estate (paragraphs 46 and 47).

(*e*) Extraordinary members may receive from the association advances up to the value of the stock of the association held by such extraordinary members.

FIFTH SECTION—IRREDEEMABLE LOANS OR MORTGAGES.

19. *Notification.*—The request for an irredeemable mortgage must be in writing and directed to the board of directors, and must also state the amount required.

20. *Evidence.*—The applicant must give satisfactory proof that he is the owner of the estate on which the mortgage is to be placed, and that he has the right to dispose of the estate. He must also state any loans or other obstacles that encumber the estate at the time of his application for the loan.

The applicant should also state the value of the estate which is to be given in mortgage.

21. Irredeemable loans will not be issued under 100 marks.

22. The association grants the loans on mortgage. The association then issues mortgage certificates guarantied by the association and secured by the mortgage. These certificates are sold to the public and are listed on the stock exchange under Government authority. All such certificates are divided in series, numbered, and the length of duration or time of redemption specified.

23. *Interest.*—The association receives interest on the face value of every loan as an annual rent, if it has not been canceled by part payment (paragraph 26).

(*a*) Every series has a stated rate of interest (paragraphs 61 and 62).

(*b*) And for the gradual redemption of the loans, as many more per cent as the plan of redemption require.

The rate of interest is fixed by the general assembly on motion of the directing committee of the association. The applicant for a loan must pay the cost and a provision, which shall not exceed more than one-third of 1 per cent.

24. *Payment of interest.*—Interest is paid semiannually, according to the series, either the 2d of January and 1st of July or the 1st of April and 1st of October, at the office of the association in Dresden or in such other place as the board of direction of the association may direct. If the interest is forwarded by mail, it is at the risk of the sender.

Interest must be paid on the day it is due; if not, the association has the right to demand 1 per cent interest for every day of delayed payment. If the payment of the interest is delayed more than two weeks the association can call in the loan.

25. *Cancellation of loans.*—The association can not cancel the loan unless—

(*a*) Irregularities should be found in the statement of the debtor after the credit has been granted (paragraph 20).

(*b*) In case of the value of the estate having considerably decreased (paragraph 57).

(*c*) Expulsion of a member or the member (paragraph 10).

(*d*) If the association should be dissolved (paragraph 107).

In every one of the above instances, the association must give six months' notice before cancelling the loan.

The association has the right to the immediate recall of the loan—

(*a*) In case of delay in the payment of interest (paragraph 24).

(*b*) As soon as the debtor stops his payments of interest (paragraph 59).

(*c*) If an estate given in mortgage to the association has been sold and the purchaser did not become a member a month from the date of purchase, the liquidation of the mortgage must be the mortgage certificates of the association, payment may be in cash at the discretion of the directors of the association.

26. *Extraordinary part payments.*—If the mortgagor wishes to make a part payment on his mortgage in excess of the amount of the payments of the sinking fund (paragraph 23) it

can not be received in cash. The mortgagor must, on the open market, purchase the mortgage certificates of the association of the same number and series as that of the debt. The interest on the mortage then is decreased according to the amount refunded to the association. The balance of the interest is calculated from the quarter day subsequent to the payment.

A partial liquidation of the mortgage can only be made by the mortgagor in case he has made an extraordinary part payment, or in consequence of a cancellation of the loan by the association.

The partial liquidation of a mortgage appertaining to the association can not be made (excepting in case of subhastation) before the royal commissary (paragraph 100) has sanctioned it by countersignature of the receipt and affixed his official seal.

Every cancellation of a mortgage, in consequence of which mortgage certificates have been issued by the association, requires the sanction of the royal commissioner.

A recognition of the signature of the commissioner by a court of law is not required.

27. *Reentering.*—If part payment of the mortgage has been made and the mortgagor has not availed himself of his right to have the remainder of the mortgage liquidated, the new owner of the estate can enter or the original owner of the estate can reenter by returning the receipts he holds.

28. *Full payments.*—If the mortgage is entirely discharged before the time specified (paragraph 236) and all interest and expenses whatsoever that might have been due have been discharged, the mortgagor may move the liquidation of his mortgage.

29. *Precautions.*—Members of the association who have given mortgages on their land may bring suit against the association in case of difference, but if the suit is decided against the mortgagor, he shall not have the right to reopen the question or appeal from the decision rendered in the first suit.

30. *Deeds.*—The abandonment of the mortgage deed, and the acknowledgment which must always accompany it, and the obligations or mortgage certificates are to be made out according to the regulations and the order of business.

SIXTH SECTION—LOANS TO COMMUNITIES.

31. The application for a loan to a community must be made by the representative of the community accredited to the directors of the association and accepted by them as a representative of the said community. The application can be made orally or by letter.

32. The application by the community or union of communities by their representative for a loan (paragraph 5) must be accompanied by evidence that the community or communities in meeting authorized their representative to apply for the loan in question to the association and that it has their approval and authority.

33. The association issues the loan to the communities in mortgage certificates or in cash, as they think best.

34. Loans to communities are under paragraphs 22–30, unless the investment in a mortgage is presupposed, with the distinction that the mortgage certificates shall take the place of mortgage deeds.

34. The association has the right to free the communities or union of communities from the obligation of becoming members in the intendment of the law of the 21st of April, 1873, concerning the formation of the unions of districts.

All communities and unions having loans from the association without acquiring membership have no claim whatsoever to the property of the association.

Every six months the board of direction of the association must hand to the royal commissioner a register of the communities and unions and the loans granted them by the association.

SEVENTH SECTION—RECALLABLE LOANS ON MORTGAGE.

35. *Amount of these loans.*—Recallable loans on mortgage will not be given under the amount of 150 marks.

36. *Granting of loans.*—Loans of this kind are issued by the association under an agreement between the board of direction and the applicant, and are paid either in mortgage certificates (paragraph 70) or in cash (paragraph 22).

37. *Interest.*—The rate of interest is fixed in every case by an agreement between the board of direction and the mortgagor. The general assembly of the association can, on motion of the board of direction, fix the amount of interest, beyond which it can not be raised.

38. *Repayments.*—These loans may be recalled in part, or the entire loan may be recalled by both parties.

A partial recall of the loan by the association empowers the mortgagor tc repay the entire loan.

Recall of loans can only be made on March 31 and September 30.

Payment of the loan can only be in cash.

39. *Applicability.*—The regulations in Section V, in as far as deviations from the rules have not been made in the foregoing paragraphs, or unless they concern the payments of the capital in mortgage deeds (paragraphs 25–26) and the sinking fund (paragraphs 23–28), are applied to the recallable loans on mortgage (paragraphs 24–26).

EIGHTH SECTION—TIME LOANS.

40. *Notification.*—If a member wishes a loan, he must inform the board of direction, stating the amount he wishes, the time of the duration of the loan, and the nature of his security, also such qualifications as are indicated in paragraph 44.

41. *Limiting the amount which can be advanced.*—Time loans shall not be given under 75 marks. Applicants for time loans are considered in the order of their application, but applicants for small loans take precedence of large ones.

42. *Interest.*—The rate of interest on all such loans is to be fixed by the board of direction, besides a provision that every receiver of a loan must pay, which is also fixed by the board of direction.

43. *Repayment.*—Time loans can not be for more than six months, but the board of direction can extend the time for six months more when the first six months have expired.

44. *Security.*—In order to obtain a loan, it is required—

(*a*) That the applicant shall not be in arrears for former advances of the association nor have prejudiced any guaranty to the association.

(*b*) That he fulfills the requirements in section 20.

(*c*) That he must give a mortgage to the association on the estate offered as security (paragraphs 46–47).

(*d*) That, as the case may be, he shall draw a bill in favor of the association and produce a guaranty or security through other objects of value.

45. *Rejection of application.*—An applicant can not demand the reason for the rejection of his application. He may, however, bring the rejection before the general assembly of the association and must abide by their decision.

NINTH SECTION—ESTIMATING VALUE OF ESTATES.

46. *Data.*—The board of direction may take the tax returns as the value of the property, or if they are not contented with the tax value or if the applicant is not contended with the appraisement, a new appraisement will be made according to section 47 of the rules of the association.

47. *Appraisement of estates.*—Appraisement of estates, which are offered as security to the association, can only be made by members of the association.

A revision of appraisement can only be made by a member of the board of direction.

48. *Principle of appraisement.*—The appraiser must state the actual market value of the property, or what it would, in his opinion, bring at public sale. Relative values can only be accepted under particular circumstances.

49. *Deductions from the gross value of estate.*—All charges and incumbrances, such as mortgages, etc., must be deducted from the value of the estate.

50. *Irredeemable liens.*—Irredeemable liens on the estate must also be deducted from the value of the estate.

51. *Documentary evidence.*—The applicant for the loan must produce, in authentic form and at his expense, all documents that may be required.

52. The applicant has not the right to protest against the findings of the board of direction.

53. The applicant must pay all charges for the examination of his title to the land and any other charge connected with the mortgage.

TENTH SECTION.

54. When the value of the estate is impaired, the mortgagor must first have the consent of the association before he can sell any part of the mortgaged estate, except in case of ejectment.

55. *Annulment of mortgage by the association.*—The association can only vacate its claim against an estate in case of repayment of the mortgage, or if another estate of the same value is mortgaged.

56. *New charges.*—The mortgagor can not make new charges on the estate without the consent of the association. Only those charges which were on the estate previously to the loan of the association will be regarded. Taxes and charges for the cultivation of the estate are excepted.

57. *Loss of buildings.*—If buildings forming part of an estate or the entire estate on which the association holds a mortgage or other claim are pulled down or destroyed in any way, the board of direction of the association must fix a time by which the buildings must be rebuilt. The board of direction may, however, waive this right if the value of the buildings in question is so small that the value of the estate is not impaired. If the mortgagor refuses to rebuild, the association must recall the loan, or if the mortgagor rebuilds and the building is not of the same value as the one destroyed, a proportionate amount of the loan is recalled.

ELEVENTH SECTION—PROCEEDINGS IN SEQUESTRATIONS AND FAILURES.

58. *Sequestration without failure.*—In case of sequestration without failure, the interest due the association must be paid from the rents of the mortgaged estate without detriment to the public taxes and other real charges, the mortgage debts, and the cost of sequestration (paragraph 24).

59. *Failures and necessary subhastations.*—With regard to the irredeemable loans of the association, by irredeemable association loans it is to be understood that the association can not recall the loan when all the rules and regulations of the association have been observed, but the mortgagor has the right to cancel the loan at any time he may wish by giving a certain stipulated notice to the association. Repayment of the rest of the capital, which has not been discharged since the next antecedent inventory of the association, is to be made in mortgage certificates of the same series and same rate of interest, with coupons of the term of payment stated thereon.

From the time of the failure, or from the time when the subhastation without failure took place, the gradual discharge of the mortgage by amortization will discontinue with the next antecedent inventory of the association, and the association has the right to claim interest from the same time. The association has the same rights as other mortgage creditors.

TWELFTH SECTION—DEBTS OF THE ASSOCIATION IN GENERAL.

60. The debts of the association consist of (1) mortgage certificates and bonds issued by the association, (2) loans made by the association against their obligations and savings credited to account books, (3) interest and expenses of administration, as well as (4) stocks of the members of the association (paragraph 78).

61. *Of mortgage deeds and bonds* which can be drawn.*—The association issues bonds bearing the name of the holder and the rate of interest. These can not be recalled by him, but may be drawn. The former are according to form stated under I, the latter to that indicated under II, for 2,000 marks, 1,000 marks, 500 marks, and 100 marks each, with coupons for ten years.

On each mortgage deed or bond the series to which it belongs must be designated by roman figures, printed on the face of the bond. They are also to be marked with letters according to their face value and in running numbers in each series. All mortgage deeds and bonds of the same series have the same interest.

The right of recalling the mortgage certificate is reserved to the association. The recall is to be made through public advertisement, allowing a half-yearly term that is to be counted from the first publication (paragraph 67).

The mortgage certificates or bonds must be signed by the chairman of the board of direction or his deputy and by the delegate and countersigned by the commissioner of the Government, by affixing his stamp or seal, or in any other proper manner. The signature of the royal commissioner is a guaranty that the certificate or mortgage certificate which has his signature is secured by a mortgage of equal value to the mortgage certificate. The coupons have the printed facsimile of the chairman's signature.

62. (*b*) *Rate of interest.*—The rate of interest of a new issue is fixed by the committee previous to its issue.

The reduction of the rate of interest can only be made in accordance with paragraph 61 and by the holder of the certificate being permitted to choose new mortgage certificates at a reduced rate of interest or by the payment to the holder of the certificate in cash of its face value.

63. (*c*) *Manner of paying interest.*—The interest, as well as the principal of the mortgage certificates and bonds, when recalled, are only paid to the holder, viz, the interest against the coupons, the principal on the return of the mortgage certificates.

Payment is made at the office of the association at Dresden or by its authorized agents.

Interest is paid on the 1st of July and 2d of January of each year.

64. *Cancellation.*—Cancellation of mortgage certificates is regulated by the board of direction. Coupons can not be canceled.

65. All matters regarding cancellation are regulated by the board of direction.

66. *Regulations regarding the issuing of mortgage certificates.*—The amount of mortgage certificates and bonds that can be issued by the association must never be higher than the face value of the loans issued or granted on mortgage or under bond to communities, and when the mortgage or bond has been repaid a like number of association mortgage certificates must be canceled.

67. *Redemption of mortgage certificates and bonds.*—From the end of the first year, after the close of the series, as many mortgage certificates and bonds are to be redeemed as there is money in the sinking fund.

The time of redemption is advertised six months before the date at which the mortgage certificates and bonds will be redeemed, as well as the letter and number of the series. All interest ceases on the date appointed for payment.

68. *Rescinding of mortgage certificates, etc.*—All mortgage certificates and bonds, together with the coupons, having been redeemed and all those that were received as capital payment will be rescinded. The form for the withdrawing and rescinding will be made in the regular order of business.

69. *Limitation and invalidation.*—The mortgage certificates and their coupons are coordinate with the royal Saxon public stock with respect to the limitation, which is to be printed on the mortgage certificates, bonds, and coupons.

All amounts lost by limitation will fall, or be credited, to the general reserve fund.

* For mortgage bond, read mortgage certificate.

Should mortgage deeds, mortgage certificates and bonds, or coupons be lost, a citation from the court will be issued on the motion of the parties concerned, and at their expense, when the papers will be invalidated.

By the royal rescript of the 6th of October, 1824, it is decreed that the term of limitation is to be ten years for the royal Saxon public stock, but shall be limited to three years for mortgage certificates and other documents of interest and value.

70. *Redeemable mortgage certificates.*—Redeemable mortgage certificates are issued bearing the name of the holder, according to the form described under 111, in amounts of 2,000 marks, 1,000 marks, 500 marks, and 100 marks. They have their coupons. The latter are extended to the period of ten years. Each series is stamped with a roman figure and each class with a particular letter and running number. The rate of interest is also printed on the certificates' coupons.

71. *Rate of interest.*—The rate of interest for each series of the redeemable mortgage certificates is fixed by the directors.

72. *Amount of redeemable mortgage certificates.*—The face value of the redeemable mortgage certificates issued must in no case be higher than the amount issued on mortgage to secure the same and due to the association.

73. *Recalling.*—The term of recall, or at which they can ask for the payment of the mortgage certificates, is one year. The holder wishing to recall or receive payment must present them to the comptroller one week before the date on which the payment on the coupon is due. The head comptroller shall certify to the cancellation, stating the number of entry in the book as well as the day when they became due. From this day the amount of interest due can be received at the pay office of the association.

The right of recall is likewise reserved to the association, and their recall shall be made by means of three publications in the public press, allowing a respite of six months beginning from the first publication.

Paying of interest, disbursement, and receipt of capital of the mortgage certificates are the same as in paragraph 67.

74. *The legalization of the redeemable mortgage certificates.*—The legalization of the redeemable mortgage certificates is made by the signature of the chairman of the board of direction of the association and the Government commissioner. The legalization of the coupons is to be made according to the directions in paragraph 61.

75. *Limitation, invalidation, and canceling.*—For the limitation, invalidation, and cancellation of redeemable mortgage certificates, their coupons, etc., see paragraphs 64, 65, and 69.

76. *Loans upon obligations of the association.*—Obligations made by the association contain all the terms regarding the payment of interest and the time of repayment. Such loans may be made at such interest as the directors think to the advantage of the association, and must be signed by no less than two members of the board of direction.

77. *Account books.*—In lieu of an obligation, the association may give to the borrower an account book which contains all the conditions of agreement between the borrower and the association regarding rate of interest and time of repayment of loan (paragraph 16).

78. *Legal quality of the stock.*—As the stock of the members of the association have the character of a claim against the funds of the association, and as this claim is paid in cash to the retiring member and liquidated with the debts of the association at its dissolution, if the assets of the association should not suffice to cover all debts of the aseociation, the stock of the members becomes part of the assets of the association. If the entire stock of the members is not required to satisfy the debts of the association, then each member shall be assessed according to directions contained in paragraph 17.

THIRTEENTH SECTION—PREROGATIVES OF THE ASSOCIATION AND ITS PRIVILEGES.

79. *Trust estates.*—Under the authority of the laws of Saxony, pay officers, administrators of charitable funds, boards of public instruction, churchwardens, and guardians, are

allowed to place the capital and the interests, monetary, in mortgage certificates of the association.

80. *Sale of deposited pledges.*—If a member should deposit stock (consols) or other papers or objects as security for a loan, and if the member become bankrupt, the pledges can only be delivered upon the payment of the entire and whole debt due the association by the member. If this payment is not made, the association is authorized to realize on the deposits or security in its hands at their maturity and to deliver the surplus to the bankrupt's estate or to the creditors of the bankrupt in such amount as the surplus will liquidate their claims.

FOURTEENTH SECTION—WARRANTING THE CREDITORS OF THE ASSOCIATION.

81. All property of the association, in land or other securities, as well as the sinking fund and stock of members, is liable for the debts of the association. If this is insufficient, the liability of all the members and even former members is secured to the association according to paragraphs 11 and 17 (*c*).

The directors must make a statement of the condition of the property and business of the association as prescribed by the regulations (paragraph 101) not later than six months after the expiration of the year.

FIFTEENTH SECTION—ADMINISTRATION AND SUPERINTENDENCE.

82. *Administration of the association.*—The administration of the association is directed by (1) the general assembly (paragraph 83), (2) the committee of the association (paragraph 94), the board of directors (paragraph 89), the board of election (paragraph 91), (3) the committee of review (paragraph 96), (4) the trustees, (5) the personnel of the office. All the members of the administration, except the personnel of the office, must be members of the association.

83. *Convening of the general assembly.*—The general assembly is convened by the chairmen of the board of direction and board of election.

The convening is made by means of a notification, published twice at least, stating the time, place, day, and order of business.

Notice must be given of the meeting of the assembly at least a fortnight before the day appointed.

84. At the closing of each business year, a general assembly must be convened within six months. On important occasions the committee of the association is empowered to call a general assembly. Any complaints by the board of direction against the board of election must be made in the general assembly. An assembly must be called at the request of 10 per cent of the members; the request must be made in writing.

The chairman of the board of direction may at any time call a general assembly.

As a rule, and unless the general assembly have appointed another place, which they are at liberty to do, the general assembly will be held at the headquarters of the association at Dresden.

85. *Order of business.*—The chairman of the board of election is the presiding officer of the general assembly, but if complaints have been preferred against the board of election, or if an extraordinary general assembly has been called by the board of direction, then the chairman of the board of direction is the presiding officer of the assembly (paragraph 84).

In all instances in which the personal interest of the board of election is concerned, the chairman of it shall retire and the chairman of the board of direction shall take his place as presiding officer.

As a rule, the order of business for the day is determined by the committee of the association, but by the board of direction in extraordinary cases (paragraph 84).

Motions of members, if they have been made by letter and have the approval of ten members, must be considered in the order of the day.

Motions of single members, which have been made in writing at least a week previous to the general assembly, although they may not be germane to the subject or in the published order of the day, will be discussed, but no resolution on them will be taken.

86. *Minutes of the proceedings of the general assembly.*—Minutes of the transactions and resolutions of the general assembly shall be drawn and signed by the chairman and two members after having been read and approved.

87. *Right of voting.*—Every recognized member may attend the general assembly and vote, under the following exceptions: Communities that may be represented by their delegates, wives who are represented by their husbands, and members holding proxies, can only have their own vote; no proxy will be accepted.

The legality of the actions of the general assembly is not affected by the number of members attending (paragraph 107). In voting, the majority will decide, unless otherwise determined by the regulations (paragraph 107). Elections are to be determined by the absolute majority. In case of equality of votes, the chairman's vote will decide. Resolutions made according to the regulations of the association are binding on all members.

88. *General assembly.*—The general assembly deliberates on and settles the following questions:

(*a*) Completion and alteration of the regulations, with the consent of the Government.

(*b*) Election of members of the board of direction and their substitutes.

(*c*) Fixing the rate of interest for unrecallable and recallable loans (paragraphs 23 and 24).

(*d*) Amount of per cent of the dividend and closing of the reserve fund (paragraphs 102–105).

(*e*) Control of the committees of the association, complaints against the committees, board of election, board of direction, and single members of the association.

(*f*) Dismissal of members of the board of direction and board of election if they are guilty of actions contrary to the regulations.

(*g*) Auditing the reports of the year.

(*h*) Certification of the inventory and balance, after having heard the report of the committee of review.

(*i*) Election of the committee of review for the ensuing business year.

(*j*) Resolutions or other motions made by the committees of the association or single members of the association.

(*k*) Resolution on the dissolution of the association (paragraph 107).

89. *Board of direction.*—The board of direction consists of fourteen members, and for each member a substitute must be elected at the same time as the election for the director.

The members of the board of direction and their substitutes must be ordinary members and land proprietors.

The members of the board of direction elect every three years one of their number chairman and secretary by a majority of votes, which may be relative at the third election only.

The election of the chairman and his substitute is announced every year.

A third part of the board of directors are elected every year, but those who have been directors may be again elected, as well as their substitutes. If the chairman and his substitute have resigned their posts, a new election must be held at once. The members who must retire at the end of the year is decided by lot the first year; later, by the date of their entry in office. The board of direction may meet at their office without the board of election, or at any other place the chairman may indicate. The call for a meeting is made by the chairman of the board of direction and eight members constitute a quorum. The minutes of the meeting will be recorded by the secretary and signed by all the members present.

90. *Duties of the board of direction.*—The board of direction has—

(*a*) To elect members of the board of election (paragraph 91) and their substitutes, and every candidate or his substitute must be voted on separately; the term of election is three years. The board of election will enter office on the 1st day of July in the year in which their election has taken place. If, during the term of office of the board of election, a

vacancy should take place involving the election of another member, the new member's election is only valid up to the 30th of June of that year in which the term of office of the whole board expires. Members of the board of election who have resigned their post may be reelected.

If a member of the board of election has served for six years and is reelected for six years more, the member's term expires if the board of direction give notice on the 1st of January of the last year; if no notice is given, the member is considered to be elected to the board of election for six years more.

The board of direction may, on account of gross offense, remove a member of the board of election (paragraph 88 excepted).

The members of the board of election may join the pension fund of the association on payment of premiums in proportion to their salary.

When a member of the board of election has served twelve years, he may retire and receive from the pension fund such an amount as is stipulated by the regulations of the pension fund.

If a member of the board of election is discharged from the board on account of offenses against the association, his right and title to any part of the pension fund is forfeited.

(*b*) The board of direction represents the association before the board of election and have a general control and administration of the business of the association and present such questions to the general assembly for their consideration and settlement.

(*c*) The board of direction can demand and exact information regarding all loans and advances given by the board of election, as well as the securities on which the loan is granted, and all other books and documents whatsoever or in any way relating to the affairs of the association. They may also install a substitute in the place of an offending member of the board of election; when this occurs, a general assembly must be convened as soon as possible and the case submitted for its decision.

(*d*) The board of direction is to maintain the regulations of the association and the business of the association in general—such as the issuance of mortgage certificates and bonds and making of loans.

The members of the board of direction have no salary, but their expenses shall be paid (paragraph 97).

91. *The board of election.*—The board of election consists of three members, the chairman, director, and head comptroller.

The functions of the association are distributed among the members of the board of election according to the regulations for the order of business and the order of office.

In case of a member of the board of election being prevented for any length of time from attending to the functions of his office, his place will be filled during the time of his absence by a substitute, chosen by the board of direction or by the chairman of the board of direction, unless it has been otherwise provided for by the general assembly or the regulations.

Any member of the board of election may represent the association.

Every member of the board of election is responsible to the association for his actions.

A member of the board of election must give six months' notice in case he wishes to resign, and during this time the board of direction shall hold a new election.

Should the association, for any cause, have no legal head or chairman, the royal Amtsgericht, at Dresden, or the court, which is in the future to replace it, shall and can appoint a legal head. The association must, in this case, as soon as possible, hold an election and vote for and elect their own chairman and legal representative, according to the regulations.

91*a*. Any change made in the personnel of the board of election must be advertised and have the approval of the court.

The official transactions of the members of the board of election whose names have been stated to and approved by the court and who are recognized according to paragraph 92 are

good and binding on the association, even if their election should later on be proved irregular.

For third parties, the restrictions which are or may be imposed on the members of the board of election in the regulations or by resolution of the association concerning representation of the latter have no legal effect.

92. *Duties of the board of election.*—The board of election control and manage the transactions of the association under the supervision of the board of direction.

It represents the association in all questions and transactions, active and passive, in all legal questions, and has the power of administering oaths; the only legitimation of the board is that the election of the board in question has been published, and this publication shall be made by the committee of the association. In all legal transactions which require to be registered—such as mortgages and the survey of land—the cooperation of all three members of the board of election is necessary. Documents and writings signed by the board of election and with the seal of the association affixed do not require the acknowledgment of a notary or court, but are to be regarded as legal and public documents.

The board of election must pass on new members (paragraph 6) and decide on their admission or exclusion (paragraph 7), settle accounts with retiring members (paragraph 10), call in all amounts due the association, acception or nonacception of loans, both recallable and unrecallable, on advances, calling in capital, and act in all respects in accordance with the regulations of the association.

It is, however, understood that their responsibility does not extend to any liability for a deficit or loss which the funds of the association may suffer by insolvency of a debtor for an error which might be made in judging his solvency, if the regulations of the association have been observed.

The board of election shall answer all questions propounded by the association, and in every case inform the board of direction of their actions; they shall also make all the required preparations for the meetings of the committee of the association and for the general assembly.

93. *Salaries.*—The members of the board of election will receive a salary, which is to be fixed by the board of direction.

94. *Committee of the association.*—The members of the board of direction and board of election form the committee of the association, all with equal voting rights.

The meetings of the committee of the association are held at the office of the association, and such meetings are to be held as often as the chairman of the board of direction or board of election may think fit, or if any member of the boards should move for a meeting. The call for the meeting may be made by either chairman; that chairman who has convoked the members of the committee will act as chairman of the meeting.

A quorum of the committee consists of eight members of the board of direction and two members of the board of election.

95. *Duties of the committee of the association.*—The committee of the association must—

(*a*) Appoint the trustees of the association, the cashier, and the officers of the association.

(*b*) Fix the rate of the admission fee for the year (paragraph 19).

(*c*) Make the order of business and proposals for the consideration of the general assembly (paragraph 88).

(*d*) Make general provisions (paragraphs 23, 37, and 42).

(*e*) Fix the rate of interest paid on the mortgage certificates (paragraph 23).

(*f*) Provide for the cost of administration (paragraph 103).

(*g*) Fix the per cent of loss on the movable and immovable property of the association.

(*h*) State the order of business, office, and cash.

96. *Committee of audit.*—The committee of audit consists of five members, who must be elected a year in advance by the general assembly from among its members, save and excepting the members of the board of direction and board of election. They must examine all the accounts of the association. Should the committee find any errors in the accounts of the

association, they must at once notify the board of election and board of direction. The committee of audit can not receive a salary or be reimbursed for their expenses.

97. *Trustees.*—The association is divided into as many districts as are necessary. In every district, the committee of the association nominates from among its members resident in that district one or more trustees, who will discharge the functions of their office under the directions of the board of election. The board of election can give them a power of attorney which binds the association for actions taken by the trustees, judicial or nonjudicial. The trustees have no salary, but their expenses are paid.

98. The order of business shall contain all particulars regarding all accounts, as well as the actions taken by the board of direction and board of election and the reports from all the committees of the association and trustees.

99. Every year, on the 31st of December, the books of the association will be closed, and the board of election of the association shall publish a statement showing the condition of the association. Every month, a rough statement of the condition of the association, financial and otherwise, must be furnished to the chairman of the board of direction.

100. *Superintendence.*—A royal commissioner is appointed by the Government to control the actions of the association. He is entitled to take part in all meetings of the committee of the association and to examine all books and papers of the association at any time, and must cooperate in the issue of all mortgage certificates and bonds of the association (paragraphs 61 and 74); he shall, also, attend the general assembly to which he should be invited; he must see that the regulations of the association are obeyed and that nothing is done contrary to the law and regulations.

101. *Publications.*—All publications made and required by the regulations of the association must be under the hand and seal of the association and must be published in the Leipziger Zeitung, such publication being held to satisfy all legal requirements. The board of election and board of direction may also use other papers but must use the above-named Leipziger Zeitung.

SIXTEENTH SECTION—TREASURY.

102. *General reserve fund.*—The general reserve fund is formed by the admission fees of the members (paragraph 14) and by a certain per cent of the net profits, which is to be determined by the committee, and, also, by an additional allowance mentioned in paragraphs 69 and 75. This fund is to be used in case of losses to the association, and can only be closed when the fund has reached an amount equal to 10 per cent of all loans issued by the association. If this fund is used on account of a loss or to cover any other deficit, the entire net proceeds of the association shall be paid to the reserve fund until the amount is equal to the amount drawn from it.

103. *Sinking fund.*—A sinking fund for the several series of mortgage certificates and bonds, and a special sinking fund for each series of unrecallable loans, shall be formed; for this fund, the annual net proceeds from these loans will be employed, the cost of the administration having been first deducted.

104. *Costs of administration.*—The costs of administration are defrayed from the general funds of the association, and the committee will fix the per cent that is to be charged against the unrecallable loan fund.

105. *Net proceeds and dividends.*—The surplus of all assets over all debts, after the cost of administration has been deducted and the amount of profit and loss account adjusted and the amounts due the reserve fund paid (paragraphs 95 and 102), will be distributed as dividends among the members in proportion to their stock, or it can be partly transferred to next year. The dividend is fixed by the general assembly on motion of the committee of the association, and paid in cash at the office of the treasurer of the association at Dresden two weeks after its approval by the association, date of payment to be published in a newspaper. Payment will be made in such manner as the committee may direct.

106. *Investment of balance.*—Those balances in cash which can not be invested at interest in accordance with paragraph 18, 1 to 4, the board of election may utilize by discounting bills of exchange or the purchase of consols, giving loans against objects of value and of good security.

SEVENTEENTH SECTION—DISSOLUTION.

107. The voluntary dissolution of the association can be only resolved at the general assembly and the resolution must have three-fourths of the votes in its support. The presence of two-thirds of the members is required; if such number is not present, another general assembly must be called.

The next eight sections relate to the regulations governing the dissolution of the association. As they are not particularly important and in no way regard the plan of the association, I have therefore omitted them.

Board of direction.—For "board of direction" should be read board of supervision and for "board of election" board of direction.

Unrecallable loans.—Unrecallable loans are loans that can not be recalled by the association as long as the interest is paid and the regulations of the association observed, but may be discharged by the borrower at any time with such notice to the association as is directed in the regulations.

THOMAS WILLING PETERS,
Commercial Agent.

PLAUEN, *April 15, 1896.*

SUPPLEMENTARY REPORT.

I beg to inclose herewith a translation from the Leipziger Tageblatt relating to the statement of the Landwirthschaftlichen Creditvereins, or Agricultural Loan Association, of the Kingdom of Saxony.

I reported on this association in my dispatch of the 15th of April, and as the statement is germane to that report, I transmit it herewith.

THOMAS WILLING PETERS,
Commercial Agent.

PLAUEN, *May 7, 1896.*

[Translation from the Leipziger Tageblatt.]

AGRICULTURAL LOAN ASSOCIATION IN THE KINGDOM OF SAXONY.

The statement of this institution for the year 1895 is most favorable and demonstrates greater and more profitable transactions than in any year of its existence.

In 1891, there were 477 applications for loans; in 1894, 637; while in 1895, the number of applications rose to 1,880.

In former years, applications for loans hardly exceeded 10,000,000 marks ($2,380,000); in 1895, they amounted to 36,000,000 marks. There was actually 36,382,510 marks ($8,659,037) issued in loans, after the repayment of 5,840,547 marks ($1,390,059.71) arising from the conversion of recallable loans* into time loans, or redeemable loans, which have been deducted.

The total sum outstanding in loans, up to the end of 1895, has increased from 166,448,927 marks ($39,614,484.46) in 1894 to 196,990,890 marks ($46,883,832).

*NOTE BY TRANSLATOR.—Recallable loans are loans that can not be recalled by the association, but may at any time be paid by the borrower at his option, when due notice has been given to the association.

It has, above all, been the aim of the association to assist the small farmers, and among the 13,461 loans granted, there are 11,537 items to this class, the highest amounting to 20,000 marks ($4,760).

The loans granted in 1895 were at the rate of 49.87 per cent of the value of the estates mortgaged, without regard to the buildings on the estates.

The extraordinary favor with which the borrowing public supported the association is owing to two causes, viz, (1) the issuance of loans at 3 per cent, (2) the advantage of the redeemable loans, which are appreciated more and more, for the borrower may at any time pay his debt to the association in, or by the purchase of mortgage certificates of the association, while the association can at no time demand payment of the debt (as long as the interest is paid), not even in the most unfavorable times, nor can it claim a higher rate of interest on its loans than it pays to the holders of its mortgage certificates.

There are now in circulation 172,935,350 marks ($41,158,861.33).

The building, furniture, etc., valued on the books of the association at 644,700 marks ($153,438.60) at the close of 1894, have been sold to the postal authorities for 900,000 marks ($214,200); of this, 600,000 marks ($142,800) is placed to the credit of immovables of the association, 158,000 marks ($37,604) are credited to the Mehnert fund, 100,000 marks ($23,800) for building, and 42,000 marks ($9,996) furnishing.

The net proceeds, including 153,368 marks ($36,565.84) forwarded from former years, make a total of 624,277 marks ($148,577.93). Of this sum, the special reserve fund receives 50,000 marks ($11,904.76), the general reserve fund, 30,000 marks ($7,140), the pension fund 30,000 marks ($7,140), and, furthermore, a dividend of 5 per cent shall be declared on members' stocks, which amounted, at the time of settlement of accounts, to 8,394,846 marks ($1,997,973.35).

PRODUCTION OF COFFEE IN MEXICO.

I am persuaded to prepare this report on Mexican coffee by the large number of letters I am receiving from every State in the Union upon that subject, from persons seeking commercial information, from persons seeking personal or community information, contemplating removal to Mexico, and from persons engaged in the historical investigation of the bean, and Mexico in connection with the bean.

I will attempt, in the first place, to give a history of the bean from its discovery to the present time, for which I am largely indebted to a work styled Cultivation and Preparation of Coffee, by Gabriel Gomez, agricultural engineer of Mexico, who, at the time of its composition, possibly had as comprehensive knowledge of the berry as any one who ever wrote on the subject. It is due to the readers to say I never saw coffee growing until I came to Mexico in 1893, that I know little of it now, that I am more of a collector of facts about it than an originator of ideas. No one, without practical experience in growing, cultivating, and curing the bean for market can have reliable information about it. I have sought this information from the best recognized sources, from those engaged in its production, and present it as it is imparted to me; second, I shall show how it is cultivated in Mexico, in what parts of the Republic, the kinds of coffee, and the profits and sales of the same; third, how it is prepared for market; fourth, how it is prepared for table use, giving receipts from those who have had large

experience and can extract the beverage from the bean so skillfully as to make it most palatable. The question with all classes of our people is, how to obtain the best grades of coffee at the least price. I shall attempt to answer these points in a plain, simple way, so that even the unlearned can thoroughly understand what is said.

Heretofore, Mexico has not been considered by our merchants as an enlarged or promising field for coffee production, because producers have not shown much activity in presenting the crop to the market. It is strange to those of us viewing it from the present standpoint and acquaintanceship with the bean that the Mexican coffee should have remained so long unknown to and unsold in our market. Since the government of this country has passed to capable hands; since the country has opened its gates to all home-seeking people; since the world has become assured that financial investments, as well as life and property, are as safe here as elsewhere, that a large part of the country is accessible by rail and water, a new life, a greater stimulus, has been given to the production of all kinds of tropical fruits, as well by those "native and to the manner born" as by thousands of foreigners who have removed to Mexico for agricultural purposes. Mexico has shown its capacity to produce the higher as well as the lower grades of the berry—from the most delicate Uruapan to the rougher and less tasteful grain on the higher elevations—and she must become a greater producer for the markets of the world, shrinking from no comparison with the coffee of Brazil and elsewhere. There are already many agents from New Orleans, New York, San Francisco, and Baltimore located in the coffee-producing regions of Mexico, buying larger or smaller lots for their employers in the United States. I am of the opinion that Mexico has the capacity to produce every pound of coffee required in the United States, and as it is a part of the North American continent with our own country, its proximity has much lessened the cost of transportation over that from the more distant South American and Asiatic countries.

The history of coffee is interesting, and as it may not be generally known, I will present some of the most important points pertaining to the beverage. Its original home is supposed to have been Upper Ethiopia, and it was transplanted from there to Arabia Felix. It is still a controverted point with certain classes whether the beverage was known to the Greeks and Romans. The Persians adopted the berry after the Ethiopians, and the Arabs are entitled to the credit for its more general introduction into Europe. From Arabia, the use of coffee passed to Egypt, reaching Cairo at the beginning of the sixteenth century. From Egypt, it passed to Syria; from thence, to Greece and Constantinople, A. D. 1554.

Coffee was introduced into England in 1652 by a Greek named Pasquarosse, who was familiar with its preparation. Soon Pasquarosse opened a handsome café in London, and there was great activity in presenting the new drink and giving the virtues of coffee to that city. France adopted the use of the berry ten years after England; Italy claims the honor of having

discovered its merits prior to France, and it is said that an Italian brought coffee to Marseilles in 1644.

The first coffeehouse was opened in Paris twenty-five years later, during the reign of Louis XIV.

It is said the invention of newspapers, or gazettes, is due to the introduction of coffee into France. From the gossip of individuals gathered in the cafés over the cups of coffee, there was but a short step to the rude printing press, with its sheets of enlarged gossip, and the idea of such a sheet is said to have entered the brain of some genius as he was imbibing the coffee at that time.

Coffee was introduced in the early years of the seventeenth century into the islands of the sea, the West Indies, Martinique, Santo Domingo, Guadeloupe, the island of Réunion, into almost all of those parts of America in which it could be produced, and in 1748 Don Juan Antonio Gelabert introduced it into Cuba. It was introduced into Mexico from the West Indies toward the end of the seventeenth century, cultivated first at or near Cordoba, now on the Mexican and Veracruz Railroad, 200 miles from the City of Mexico and 60 miles from Veracruz, at an elevation of 2,500 feet above sea level, and situated in the midst of the most productive tropical region of this wondrous country, now commanding the attention of the world to a greater extent than it has ever done before. It is of this special section of Mexico that Prescott thus speaks in his Conquest of Mexico:

> During the first day, Cortez's road lay through the "Tierra caliente," the beautiful land where they had been so long lingering; the land of the vanilla, cochineal, cacao, then afterwards of the orange, the sugar cane, and coffee—products which, indigenous to Mexico, have now become the luxuries of Europe; the land where the fruits and the flowers chase one another in unbroken circle through the year; where the gales are loaded with perfume till the senses ache at their sweetness, and the groves are filled with many colored birds and insects, whose enameled wings glisten like diamonds in the bright sun of the tropics. Such are the magical splendors of this paradise of the senses.

Here is one of the spots in this yet undeveloped Republic where some of the finest coffee known to the human appetite is grown and prepared for the markets of the world.

As this part of Mexico is the birthplace of coffee in Mexico, and, I might almost say, any other part of the North American continent or its contiguous islands, I have taken the liberty of giving it a more special notice and description. It is to-day the richest and most beautiful spot in Mexico, with Jalapa, Orizaba, and Cordoba rising from their emerald hills in all their beauty and freshness. No one has seen Mexico in all of its splendor until he has visited this enchanting spot.

COFFEE DISTRICTS OF MEXICO.

Coffee is not indigenous to the country, but it was originally brought from the West Indies about 1790. Still, it was not until 1818 that the plant was properly cultivated, when Don Juan A. Gomez, the benefactor of Cordoba,

demonstrated to the world that Mexico truly had the soil and climate essential to the raising of coffee.

The tree is cultivated in the cantons of Acayucan, Chicontepec, Cosamaloapam, Coatepec, Cordova, Huatusco, Jalacingo, Jalapa, Minatitlan, Misantla, Orizaba, Ozuluama, Papantla, Tuxpan, Tuxtla, and Zongolica, State of Veracruz; in the municipalities of Balancan, Cardenas, Comalcalco, Cunduacan, Frontera, Huimanguillo, Jalapa, Jalpa, Macuspana, Nacajuca, Paraiso, San Juan Bantista, Tacotalpa, and Teapa, Tabasco; in the departments of Chiapa, Chilon, Cometan, La Libertad, Mezcalapa, Pichucalco, Simojovel, Soconusco, and Tuxtla, Gutierrez; in the districts of Choapam, Cuicatlan, Ejutla, Ixtlan, Jameltepec, Juchitlan, Juquila, Juxtlahuaca, Miahuatlan, Pochutla, Tehuantepec, Teotitlan, Tlaxiaco, Tuxtepec, Villa Alta, and Yautepec, Oaxaca; in the districts of Atlixco, Chiautla, Huanchinango, Matamoros, Tepeji, Tehuacan, Tetela, Tezintlan, Tlatlauqui, Zacapoaxtla, and Zacatlan, Puebla; in the districts of Hueyutla, Jacala, Molango, Tenango, Tulancingo, and Zacualtipan, Hidalgo; in the municipality of Jalpam, Queretaro; in the partidos of Cuidad de Valles, Hidalgo, Tamazunchale, and Tancanhuitz, San Louis Potosi; in the districts of Cuernavaca, Jonacatepec, Morelos, Tetecala, and Yautepec, Morelos; in the partidos of Sultepec, Temascaltepec, Tenancingo, and Valle de Bravo, Mexico; in the districts of Alarcon, Aldama, Allende, Bravos, Galcana, and Morelos, Guerrero; in the districts of Apatzingan, Ario, Coalcoman, Jiquilpam, Tacambaro, Uruapan, Zamora, and Titacuaro, Michoacan; in the cantons of Autlan, Cuidad Guzman, Guadalajara, La Barca, Mascota, Sayula, and Tequila, Jalisco; and in the departments of Ahuacatlan, Acaponeta, Compastela, and Tepic, Territory of Tepic; and in the districts of Alvarez, Centro, Colima, and Medellin, Colima.

COFFEE CROP OF 1895.

The total production of coffee in 1895 was 24,537,959 kilograms (53,983,509 pounds), distributed among the different States as follows: Chiapas, 1,997,682; Colima, 338,283; Guerrero, 13,528; Hidalgo, 400,455; Jalisco, 166,216; Mexico, 106,879; Michoacan, 477,114; Morelos, 93,132; Oaxaca, 9,784,443; Puebla, 1,278,772; Queretaro, 4,417; San Louis Potosi, 568,118; Tabasco, 268,201; Tepic, 63,237; and Veracruz, 8,977,482. The production of the country represents more than 50,000,000 trees. Since 1892, the States which have increased their plantations more than twofold are Chiapas, Oaxaca, Veracruz, and Puebla. The ratio of increase in the total production for the last two or three years is about 33 per cent annually. The consumption keeps pace with the production. As railroads open up new markets and transportation becomes cheaper, the working classes are becoming habituated to the daily use of the aromatic bean. Moreover, the exportation is increasing in ratio every year. The United States imported from Mexico in 1888 more than 7,000 tons; in 1890, 10,333 tons; in 1891, 14,044 tons; in 1894, 16,080 tons; and in 1895, 17,631 tons.

VARIETIES OF MEXICAN COFFEE.

The coffee plant mostly cultivated in Mexico is a subvariety of the mocha, or *Coffea arabica*. This is an evergreen, partaking more of the nature of a shrub, which, in a state of cultivation, varies in height from 5 to 7 feet. The range of this species is at elevations of from 1,000 to 5,000 feet above sea level, south of latitude 22° north, where the temperature does not fall below 55° F.; still, the most favorable climate for it would be where the temperature does not fall below 60° nor rise above 80° in the shade; as to humidity, there should be from 75 to 150 inches of rain during the year, and the plant should be irrigated during the dry season, if required.

The myrtle kind, which is considered as second in quality, is also extensively cultivated. It is very similar to the java, and is distinguished from the mocha variety by the leaf being larger and the corolla smaller. This plant is hardier than the mocha kind and will stand higher temperature; it is mostly cultivated in the Cordoba district. It will thrive well at an elevation of from 500 to 3,000 feet above sea level.

It is the opinion of the writer that Liberian coffee would thrive in the hot climates of Yucatan, Campeachy, Tabasco, and Veracruz. This is the hardiest of all the coffee trees adapted to the climates of Mexico, and will stand a very high temperature.

CONDITIONS OF SOIL AND CLIMATE.

As the coffee tree has a long taproot, it will thrive better on land where the soil is deep. The best soil in Mexico is a well-drained, loamy one, either of a virgin mountainous composition, or of a volcanic nature, rich in humus. A rocky soil, where the earth is deep between the rocks, is very suitable, and less manuring is then required for the plants, as the rocks are continually adding to the soil by the decomposing action of the air, rain, and other natural forces.

The climate most adaptable to coffee in Mexico is that found in the mountainous regions, with a range of temperature from 55° to 86° F. The best coffee is grown at elevations varying from 2,200 to 4,500 feet above the sea, in sections south of Veracruz; but in locations below latitude 21° north, the north limit of the coffee zone on the Gulf side, the climate being cooler, the bush requires lower elevations, ranging from 600 to 3,000 feet.

The plant is, however, cultivated by some planters at much lower levels, and even within a few miles from the seashore. For instance, in Misantla, Acayucan, Minititlan, and Tuxtla, Veracruz; and in Cardenas, Comalcalco, Cunduacan, Nacayuca, and San Juan Bantista, Tabasco. An extremely wet climate is not favorable to the coffee plant, and it will not thrive in very exposed situations.

If proper aspect, as regards sun and winds, can not be obtained, the exposure can nearly always be modified by shelter belts of trees.

On the Pacific side, the prevailing south winds must be avoided at low elevations, and on this side the tree can be planted at much higher elevations,

as the range which branches off at Jalisco and joins the Toluca Mountain and the Popocatapetl Peak breaks off the cold north winds and shelters the regions below it. As to direct sun exposure, when it is desirable to take advantage of the heat at high elevations, it is always convenient to acquire, as far as possible, a southern exposure, but where the elevation is low and the temperature is high, such an exposure would be injurous to the plant, in which case it is better to procure an eastern exposure. Generally, the action of the rains modifies the temperature in the tropics, and at elevations between 2,000 and 4,500 feet above sea level, clouds gather along the mountains almost every day before the rays of the noon sun bear their strong influence in those localities. On the Gulf side, the trees that have an eastern sun exposure, so that the sun strikes them during the morning, thrive better and yield more.

PROPAGATING THE PLANTS.

Coffee plants in Mexico are mostly propagated by seed, and the seedlings are either raised in seed beds, or taken up from under cultivated trees. After or at the time of commencing the clearing a sheltered level piece of land in a location within easy reach of a good supply of water is chosen for a nursery, which should have a soil of the same quality and not less fertile than that of the future plantation. The plot should be thoroughly cleared and the seed bed prepared by stirring and inverting the soil with hoes or mattocks, dug to a depth of from 10 to 14 inches and slightly raised to promote drainage. The ground is divided into sections 5 feet in width and 40 feet in length, leaving walks of 4 feet in width and at a slightly lower level than the surface of the beds, which ought to be surrounded by drains.

The number of plants in the nursery beds ought to be three times that required in the plantation, so that the planter will always have good trees to select for transplanting, with a reserve of trees for replacing those which fail.

The seeds adapted to germination must be perfectly formed and have reached a proper degree of maturity, the latter quality being recognized by its having reached full development and by falling from the mother plant. The best-formed coffee is that which is called planchuela, but the "caracolillo" (pea berry) in it should be avoided. After taking the pulp off, the berry, slightly dampened, is exposed to the sun for a day, and then the seeds are placed with their flat sides downward, at a depth of about an inch below the surface. The sower makes narrow furrows in the earth with small sticks across the ridges at a distance of 8 inches, the one from the other; another laborer follows, placing the coffee beans in the furrows, 6 inches apart, until the ridge is completed. Immediately afterward, the seed beds are watered with a sprinkler, and this is done every other day for forty days, at the end of which the seedlings begin to appear. This operation generally takes place in the months of May and June, in places where the rains are early, as in Oaxaca, Michoacan, Puebla, Morelos, and Guerrero, that the nursery may receive the benefit of these rains; but in Veracruz, Chiapas, and other states, it is mostly done in the months of September, October, November, and as late as December.

In production, it is safe to say that 2 pounds of coffee seeds will give from 800 to 1,000 seedlings. Having terminated the sowing, it is necessary to shelter the beds with a trellis work made of sticks, supported by forked trunks, having a height of 4½ feet and inclosing the whole surface of the beds. The seed beds are then covered with damp straw or dried leaves and the trellis with banana or platanillo leaves, allowing a few interstices to permit the light to penetrate. As the seedlings appear, the cover from the seed beds should be removed gradually, and in like manner, the trellis work, when the young plants are 6 or 8 months old. All grass and weeds must be carefully removed as fast as they appear, and the earth watered whenever it seems dry. Some seeds may not grow, and others, as soon as the seedlings come up, may wither; so it is advisable to replace them directly from the seed.

PREPARATION FOR PLANTING.

The first stage in attending to the work or preparing the plot to be planted is commenced in the first part of the dry season (January or February), which in the tropical region generally begins in the month of November. The first part of the work consists in cutting down all the underbrush and small vegetation, with either the machete, hoe, or garrabato; this operation is followed by that of felling the large trees with axes or saws, leaving a few suitable trees every 20 or 25 feet, either way, to furnish shade for the young plants. The branches must be lopped and strewn evenly over the ground, and stumps left to rot on the ground. The large trunks which can afford timber for the carpenter's work in buildings and other improvements are carried away, while those which can not be utilized in this manner are left lying on the ground. In four weeks, on a sunny day after the morning dew has evaporated and when the wind is blowing in the proper direction, the whole heap of twigs, brushwood, etc., is burned. The burning of the brush on the ground in the preparation of the future plantation, especially in rich virgin lands, destroys many a seed that would otherwise produce weeds, and also all sorts of vermin and insects. Yet, where possible, it is better not to burn the brush, but to pack it in lines between the young plants.

The land having been cleared, the next thing is to line it out and then sow in corn so as to harvest it before June or July.

METHODS OF PLANTING.

In Mexico, as most of the coffee lands are hilly, area and configuration exercise a great influence on the distribution of the plants; hence lining, or marking and distance, must be regulated by the topography of the plot. The arrangement that has been adopted by the greater part of the planters in this country is that of dividing the land into blocks, generally 100 meters each way (328 feet square=2.47 acres), which are separated by roads 4 meters (13.13 feet) in width. In marking the plot, care should be taken to get the lines symmetrical, for a badly lined plantation causes much trouble in cultivation and harvesting. A good way to line out the land is to get two or three laborers to make a stake line, called "maestra" (the main

line) throughout the distance intended to be planted, endeavoring to make it as straight as possible. For this purpose, two straight sticks are cut according to the length of the distance desired between each tree; with these sticks, the spaces are measured out along the ground. Then a laborer follows, placing the sticks straight in the ground until the main line is completed. From this line the other lines are staked out, the places where the coffee trees have to be planted being thus indicated.

The distance at which coffee trees should be planted will vary according to the soil and the lay of the land. On very fertile soil, where there is an abundance of nutritive elements, the distance adopted ought never to be less than that which is required for the lateral development of the plant. In that case, the distance should not be less than 10 feet ($3\frac{1}{6}$ meters) either way, which should give 435 to 450 trees to the acre. On poor soil, and also on steep hillsides, shorter distances may be used, but the trees should never be closer than 7 by 7½ feet, which would give a little over 800 trees to the acre. For an average soil, with little or no exposure, 681 trees, 8 by 8 feet distant, would be a fair number.

Along the Mexican and Agricola railways, in the districts of Orizaba and Cordoba, Veracruz, the trees are sometimes so overcrowded as to injure each other and diminish the crops. It is a mistake to imagine that the greater the number of trees on a given piece of land the greater will be the return in crops. The atmosphere, sun, and rain have a great deal to do with plant growth; and in order that these important agencies may work properly, there must be sufficient space around a tree for the air to circulate freely and for the sunlight to enter. Crowding of plants prevents this and does much harm in other ways. The roots intertwine and rob one another of the available plant food, which should now exist in the soil in a soluble condition. This plant food is abstracted from the land in order to build up the many wood stems and sterile branches of the crowded trees, whereas if the plants were put in at proper distances, the food in the soil would be taken up to produce not a number of useless stems, but a quantity of fruitful branches on well-formed trees. Thus it happens that large crops are obtained from fewer trees, as may be seen in some districts of Chiapas, Michoacan, and Oaxaca.

When the plot of ground has been staked out, immediately after, it is necessary to "hole" the land, except where the virgin soil is rich and friable, but generally this work is done in the month of April or May. The pits are dug by means of spade bars, aiming always to keep the original distance of the stakes in a straight line. The size of the pits varies according to the nature of the soil. If the ground is rich and loose, 11 and 12 cubic inches is sufficient, but if it is hard and poor, the pits should be 18 inches square by 2 feet deep. Care should be taken that there are no stones or roots of trees at the bottom of the pits; otherwise, the coffee root will not be able to penetrate the soil perpendicularly, and the plant will, in consequence, wither. The earth dug out should be placed below the hole in different heaps, if the land be hilly, and the holes must be left open for a few

weeks so as to allow the air to get into the subsoil and act on the dormant constituents.

The young trees having two or three lateral branches, should be planted, if possible, at the commencement of the rainy season, in the months of June and July, preferably on a dull, cloudy day, when the ground is moist from recent rains; but it should not be too wet, else the tender horizontal roots may become clogged and twisted in the mud, which is always bad for the plant and must be avoided.

In removing the plants from the nurseries, care must be taken not to injure the roots; and they should to taken out by a spade or coa, together with the earth surrounding them, according to the pilon system. Then they are carefully conveyed in boxes, wheelbarrows, or in large baskets, the bottoms of which are covered with moist earth, to the pit, which should, one or two days previously, have been prepared with selected and fertilized earth. The laborer who has charge of the planting must open the hole sufficiently to place the coffee tree and its accompanying roots so as to fit snugly, and then press the soil down firmly with the hands or spade, so as not to leave any hollows around the plant. If, in taking out the young plants from the nursery, the taproot and fibrous roots stick out too far, they should be shortened, so that they may not be doubled up in the planting. The plants should be set higher than the surrounding earth; the object of this is to allow for the subsidence which will occur afterwards, and on a steep slope, the outer edge may be slightly higher than the inner, to check the effect of any wash that may take place. The ground should be watered in the afternoon of the day of transplanting, and, if dry weather comes on suddenly after that, the seedlings ought to be irrigated at least once a day, until they become well rooted. Even when the young plants are rooted, they require careful nursing until they throw out several pairs of branches.

The young plant should be protected from both the wind and the strong rays of the sun. The local surroundings should determine the amount of shelter required, but generally in places too much exposed, staking and low topping ought to suffice, in order to secure the stability of the plant. The coffee trees, while young, need some shade, except in very sheltered and damp places.

Trees planted on lands having plenty of rains during the year and on those whose temperature is between 60° and 72° F., require no shade after one or two years' growth, excepting where the soil has a tendency to crack or dry up and there are no facilities for irrigation during a prolonged drought.

The amount of shade required must be according to the exposure, descending rate of elevation, and increase of temperature. But the conditions to be borne in mind are that the shade must not be total, but rather moderate; that the trees which provide the shade, if the plantation is not in a forest, must be of quick growth, must preserve their leaves throughout the winter, must not produce heavy fruit or any substance which might affect the quality of the crop or the coffee tree itself, and their roots must not grow

laterally, but vertically. The natural trees left on the plot for shade are cajete, capulin, jinicuil, chalahuite, zapotes, huemba, guachipil, chanaqui, jonate, pagua, sangre de drago (dragon's blood), and tepeguaje; but for artificial shade, aguacate, banana, castor bean, mamey, mango, anona, chirimoya, papaw, guamachil, and rubber are mostly used. When the coffee trees begin to bear, the shade plants growing among them had better be taken away altogether, and the shade trees thinned out or pruned.

CULTIVATION OF THE PLANTS.

After the young plants are established in the fields, they will require constant weeding; this may be done at intervals of three or four months by using the machete, hoe, or a scraper pulled by a mule. Whichever plan is used, the ground must not be penetrated more than 2 or 3 inches, to avoid injuring the surface roots of the coffee trees, but should be well loosened around the tree and the weeds rooted out. The weeds should be gathered and placed in holes made in the middle of every four trees (burying them in different holes, in each weeding), where they will rot and become manure, serving also the purpose of keeping the moisture in the ground, thus preventing the withering of the tree where irrigation is impossible. If the ground of the plantation is very steep and the soil inclined to be washed away, it is better not to keep it too clean of grass and not to root out the weeds, as these retain the earth by their roots and stems that lie on the soil.

It is a question with many Mexican coffee growers whether the tree should be topped and pruned, as a good many trees have thrived splendidly and yielded well by merely taking off the suckers or sprouts and by keeping each one entirely free from contact with the other trees. But if the coffee trees be allowed to grow unrestrained, they will become very tall, especially the myrtle and the liberia. In these cases, it is very difficult to pick the berries, for the trees when not topped, generally bear mostly at the top, as, frequently, many of the lower branches die out as the trees increase in height. A system of topping has been devised, and it consists in removing the two primaries—the one or two top branches—by a sloping outward cut close to the stem, and then the top by an oblique cut, so that the stumps resemble a cross; but when the stem is thin and tender, its cutting should be done by means of the thumb and forefinger. This operation should be performed after the plant has borne its third or fourth crop of flowers and reached 6 feet in height. Besides the above advantage, the topping increases the spread and fruitfulness of the lower branches and prevents strong winds from having as much effect on the plantation as they would if the trees were higher.

Proper pruning of coffee trees is also very important, for if allowed to grow unchecked, they will become a tangled mass of stems, branches, and leaves, and will bear very small crops. The trees having been topped, all suckers must be removed. These are vigorous, erect shoots that spring up between the main stem and the horizontal branches and sometimes on these branches, which should be torn off, because they rob the tree of strength.

In so doing, a clear space is allowed around the stem for the free circulation of the air and for the entry of light. In this way, the temperature is raised, stagnant moisture is prevented, and the growth of mosses and other such parasites about the trees is greatly hindered.

In warm and humid sections, all sprouts appearing on the stem up to 1½ to 2 feet from the ground should always be destroyed, and only in case a big space is found between the branches, should a sprout be left, in order to make up for this defect. Pruning should be done after the rainy season on such trees as have borne fruit, and directly after the crop has been gathered. This operation should be resorted to once a year, because otherwise twigs sprout everywhere, and it is impossible for the sap to supply nourishment to such numerous outlets and at the same time be productive. To obtain the largest and most constant production is certainly the most important object of pruning. The dry twigs found on the trees after the crop should be torn off with the hands only; for the soft parts, shears must be used; for the bark and smaller branches, a sharp knife will do; but trunks and strong branches are better pruned with a fine, sharp, and small saw.

The pruning ought to be done with a perfectly clean cut, as the coffee tree suffers greatly from any wounds that may be left by the instruments; for this reason, close pruning is very dangerous.

The careful planter will every year observe whether the plants already set out become diseased or withered, replacing these and those that have died. For this reason, as stated before, the nursery ought to contain three times the number of plants.

Generally, if the soil of the plantation is originally of sufficient fertility, little or no manure will be required, if the leaves that fall annually from the trees and the vegetation that grows between the rows are turned under the soil to decay.

An excellent manure is made from alternate layers of sugar-cane refuse, of the hull and pulp of the coffee berry, yard manure, and bone dust. Fertilizers should be applied only to those plantations that show weakness and decay, and, excepting animal manure, should not be put on during the dry season. The best time to apply all fertilizers is during the rains; about 6 inches in depth of manure will last three years.

HARVESTING THE CROP.

In districts having the necessary factors to make them first class, the plant will begin to flower from eighteen to twenty months after transplanting, and the third to fourth year of growth. In districts less fertile, the plant does not flower until the second year after transplanting, and in very poor ones, until the third year. In low places and districts of an elevation less than 1,200 feet above the sea level, the trees begin to flower in the month of January and the flowering season lasts until March. In medium high places, as early as February the coffee twigs begin to break out into small, white blooms, and by July they will be in the green berry.

In districts of about 4,000 or 4,500 feet altitude, the tree is still flowering as late as June and July. In lower elevated places, the fruit begins to mature about September, and by the end of October all the berries are ripe, but in sections of medium height, the picking usually begins in November and lasts until the end of February or March. When the berries have a deep-red color, or nearly red-black, they are picked separately by hand and dropped into a small bag about 18 inches square, suspended from the neck of the picker; when full, the bags are emptied into baskets measuring from 50 to 75 pounds, which are placed at intervals in the path of the pickers. The quickest and most preferable way to gather the crops is to spread cloths beneath the trees and have the berries shaken into them. In wet weather, the berries should not be allowed to get overripe. The crop is generally gathered by women and children, who are paid 25 cents per basket, each basket producing from 10 to 15 pounds of clean coffee. About 3 bushels of berries can be picked by a good worker in a day, and this quantity will yield about 30 pounds of dry coffee.

YIELD OF MEXICAN COFFEE TREES.

The first yield of a tree cultivated in a suitable location produces from 2 to 4 ounces of merchantable coffee during the year; the second crop yields twice as much, and the third crop, when it has its full bearing, is double the yield of the previous year, and runs up as high as 1½ pounds. Of course, this is a fair average given, and in many fertile districts of Chiapas, Michoacan, Oaxaca, Hidalgo, Guerrero, and Puebla, official reports give from 3 to 5 pounds per tree in its full growth and from four years after transplanting, upward.

The yield of coffee depends mainly on the climate, soil, and cultivation; in the hot zone, along low sections, the tree is apt to be very prolific, but the product—the bean—must necessarily be light and shallow and the plant short lived. A pound per tree on an average would be a very good return.

The tree in some districts lives for twenty years after reaching its full bearing period, maintaining itself in a vigorous state and giving the same yield; but experienced planters assert that after the twenty-fifth year, the plant begins to show symptoms of decay, its crops decreasing gradually, year after year, and ceasing altogether about the thirtieth year.

Trees planted at a medium distance apart, having a fine quality of soil, good care from the time of planting, and careful attention with them when seedlings, will yield a good crop at 30 years of age. The longevity of the Mexican tree also greatly depends on the development of the principal root, or taproot, and, consequently, on the depth to which it can penetrate and the fertility of the soil.

ENEMIES OF THE COFFEE TREE.

Although there are few plants less exposed to the attacks of insects and disease, the coffee tree has certain enemies, both animal and fungus, which require attention, but none of these present great difficulties in overcoming.

A growth of moss is probably indicative of too much moisture and a generally feeble condition. Parasites or insects are easily destroyed by a free use of flour of sulphur, and by coloring and sprinkling the trees with a weak solution of lime, after having rubbed the trunk and branches with a piece of gunny sack, or by syringing the trees with soap water, to which a very small quantity of kerosene oil has been added. Proper tillage, plenty of air, careful weeding, and judicious manuring will obviate all remedies. By keeping the rows clear and the shade trees trimmed, all animals and insects, like rats, mice, and ants, will be kept away from the plantation.

PREPARATION OF COFFEE FOR MARKET.

The old method of preparing the coffee for market is still in vogue among the natives. The fruit gathered during the day is placed on thin matting, not piled, as that would produce fermentation of the pulp, the moisture of which would destroy the bright color of the berry and turn it black. The next day, after the mist has disappeared and the sun comes out in its full vigor, the contents of the mats are emptied on the drying yard. The yard should be made of stone, covered with a coating of mortar (lime and sand), built sloping, so that the water can run off quickly and the yard not be damp when the coffee is out to dry. While the berries are out on the drying yard, they are turned over two or three times, so that the rays of the sun will play over their whole surface. When the weather does not permit outside drying, a large, well-ventilated, and dry room, with a paved floor, is used. The above operation is performed for several days, until the berry is thoroughly dry; then follows flailing and treading out the grain from the dry husks with the feet. The last cleaning of the berry by the natives is accomplished by placing the berries in a large mortar, made of earth or hollowed from a log, thoroughly beaten and worked with an immense pestle or maul. After the husk has been thoroughly beaten, it is separated from the chaff by being poured from a basket held on the shoulder to a matting on the ground, the chaff being blown from it as it falls by the winds and a strong, rapid fanning from a large palm-woven fan, operated by the other hand of the cleaner. The above system will do for persons of limited amount of capital, small plantations, and places inaccessible to machinery.

The process is not very satisfactory in its results, as the grain is apt to be injured, and the operation is slow and expensive. It would justify the planter to buy hand machinery, if his means and the size of his plantation will not allow him to go into the business on a larger scale. A small pulper, huller, and separator, capable of turning out daily between 1,500 and 2,000 pounds, can be purchased in the United States for $250 (United States), with an additional cost of $250 (Mexican) for freight and duties.

For marketing the coffee, the bean is classified into "caracolillo," first and second class, and packed in bags of 150 and 200 pounds, the lighter sacks containing the best grades; however, the good planters store their coffee unhulled (café en pergamino), after being perfectly dried.

ESTIMATE OF COSTS AND PROFITS.

I append herewith an estimate of the average cost of establishing a plantation and of the profit, taken from data in various coffee districts.

First year.

	Mexican currency.	
Cost of clearing 100 acres (from $6 to $10 per acre)	$1,000.00	
Cost of lining and staking (from $3.50 to $4 per 1,000 holes)	240.00	
Cost of digging holes (from $10.50 to $12)	720.00	
Cost of 60,000 plants, at $5 to $10 per 1,000	600.00	
Cost of planting 60,000 plants, at $8 to $9 per 1,000	540.00	
Cost of replacing 25 per cent of the trees planted	465.00	
Cost of weeding three or four times, at $2.50 to $3 per acre each time	1,200.00	
Cost of 100,000 nursery seedlings, at $3 to $5 per 1,000	500.00	
Cost of tools	150.00	
Cost of houses	250.00	
Cost of fencing	250.00	
		$5,915.00

Second year.

Weeding three times, at $2.25 to $2.50	750.00	
Sundries	100.00	
		850.00
		6,765.00

Third year.

Weeding	750.00	
Pruning and tapping ($2.50 to $3.50 per 1,000 trees)	210.00	
Pulping house and store	1,500.00	
Pulper, huller, and separator	500.00	
Bags, etc	150.00	
Gathering 75,000 pounds of berries (1,500 bushels), at 50 to 75 cents per quintal	562.50	
Curing 15,000 pounds of coffee, at $4 to $5 per quintal of 100 pounds	750.00	
Sundries	100.00	
		4,522.50
		11,287.50
Less value of crop this year, 15,000 pounds, at 30 cents per pound		4,500.00
		6,787.50

Fourth year.

Weeding	750.00	
Trimming	150.00	
Bags and mats	350.00	
Gathering 300,000 pounds of berries (6,000 bushels)	2,250.00	
Curing 60,000 pounds of coffee	3,000.00	
Sundries	150.00	
		6,650.00
		13,437.50
Value of crop this year, 60,000 pounds of coffee, at 30 cents		18,000.00
Profit at the end of fourth year		4,562.50

This estimate is made, leaving out of consideration the cost of the land (generally from $5 to $25 per acre), which necessarily varies according to

locality, richness, and accessibility of transportation facilities. A small tract costs more than a large one and is difficult to obtain except from the land companies started here (Mexico City) for the purpose of supplying lots to intending settlers.

There is also no charge made for the cost of superintendence, which would vary (from $50 to $100 a month and found) with the size of the plantation and the capacity of the respective superintendent. Living expenses are likewise omitted and may be assumed by the interested party equal to the cost of farm life in other countries. The returns from side crops are not taken into consideration, which sometimes help materially toward paying expenses.

The machinery here estimated for may be worked the first year by hand, but by applying horse power is sufficient for the crop of 200 acres.

In calculating the crop returns, the lowest price of ordinary Mexican-cured coffee only is taken into consideration, while it may be fairly assumed that, by adopting an improved and modern method of curing the product, a considerably larger price may be secured. It is also well to add that the price of operations, such as clearing, weeding, and pruning, contemplates not the slipshod manner in which such things are ordinarily attended to in some sections of the country, but such as prevails on plantations where all operations are conducted by experienced managers, and with a view of obtaining the highest results possible under well-systemized and organized direction.

Of course, coffee can be planted and brought to bear in the manner usually employed in most old districts, and perhaps a trifle cheaper than here estimated, but the results are far from being as good, either in the early maturity of the trees, or in the quality of the coffee produced, or in the duration of the productive life of the plant. The cost and product are only brought down to the end of the fourth year, after which a much larger crop may be counted on with regularity, while under the present system of cultivation, there is a good crop one year and a lesser one the next.

SECTIONS BEST SUITED TO COFFEE GROWING.

It is supposed by many that the whole of Mexico is adapted to the growing of coffee; that is a mistake. The northern part of the Republic, situated outside of the tropics, is temperate and produces the vegetation proper to that zone; the southern part, which lies between 14° 30′ and 20° 30′ north latitude, may justly be called the hot country, the coffee-producing country, as a rule.

Not all the places found in the torrid zone are adapted to the development of the coffee tree. Coffee may be profitably grown at an elevation from 800 to 900 meters (about 2,700 feet), but beyond 1,000 meters it does not produce enough to justify its cultivation. Coffee grows well at Orizaba, but not beyond toward the City of Mexico, which is 182 miles northwest and at an elevation of 7,500 feet. The climate in the coffee-producing

regions is generally pleasant, not too hot or too cool. The nights are especially pleasant and refreshing, arising, it may be, from the peculiar formation of that country and the constant interchange of air currents from the Gulf of Mexico, the Atlantic and Pacific oceans. The production of coffee here is like that of other crops in the United States, governed by the season, soil, and cultivation.

INDIVIDUAL ESTIMATES.

Joseph Walsh, of Philadelphia, says:

The industry of coffee culture is still in its infancy in Mexico, though the product is of a superior quality, and grading among the best grown in any country of the world.

Mexican coffee is worth at present from 20 to 22 cents per pound in the American market, while the average cost of production is 7 cents. A plantation will pay from 100 to 300 per cent on the capital invested, each tree yielding annually from 3 to 10 pounds.

The value of coffee plantations in full bearing is calculated at the rate of $1 per grown tree, a single acre producing from 600 to 800 trees.

The soil and climate suitable for coffee growing are also adapted to the cultivation of tobacco, corn, beans, bananas, and most tropical and subtropical fruits. But among all marketable fruits, the growing of which is here accessory to coffee culture, the pineapple is the least expensive and most profitable, especially where the planter has close and cheap transportation to the Gulf ports.

In 1895, Professor Moses, of the University of California, visited Mexico for the purpose of studying its physical and economical aspects. In one of his letters, he says:

At present, the cultivation of coffee is attracting special attention, and on the eastern slope much progress has already been made.

Among the reasons is the extraordinary profit which the production of coffee offers.

The cost of its production in Mexico in general is between 8 and 10 cents per pound (Mexican) and it sells at from 25 to 32 cents.

The facts indicate that the present extraordinary demands for coffee lands in Mexico have a reasonable foundation.

Mexico has important advantages. * * * She has a territory adapted in soil and climate to this form of cultivation, and, in the Indians, an excellent body of laborers, perhaps better fitted for this kind of work than the ordinary laborers of any other country.

From an examination of the statistics, we get the following general results, showing the exports of coffee from Mexico:

	Pounds.
In 1873	1,432,100
In 1883	18,598,419
In 1889	21,755,956
In 1890	27,797,056

J. P. Taylor, a resident of the City of Mexico, and one of the most reliable authors on coffee, says:

Generally speaking, the Mexican planter has fewer troubles to contend with in growing coffee than the planter of any other country and is sure of a regular crop.

Twenty-five years may be taken as the average of coffee trees to remain in remunerative bearing.

Estimates as to the profits vary, but the lowest of them show an enormous profit, something like 100 per cent per annum on the capital employed.

LABOR CONDITIONS.

Dr. William S. Cockrell, son of United States Senator Cockrell, of Missouri, says:

I have been a resident of Mexico for five years, have been engaged in raising sugar cane, coffee, and other tropical fruits on a hacienda near San Juan Evangelista, in the State of Veracruz, and have had exclusive control of Mexican labor. I find them a class exceedingly susceptible to the management by which they are controlled; they are easily rendered useless by injudicious management, and may be maintained at a high standard with care, and by a rigid enforcement of orders and rules, with no familiarity whatever exercised toward the men, as that encourages insubordination. The lower the wages, the better the service; even though below 18 cents a day, as then they have no excess to waste and not so many holidays on which to waste it.

A writer thus says of the Indians on the Isthmus of Tehuantepec:

The Indians on the isthmus are the most industrious, honest, and peaceful in Mexico, of a mild and gentle disposition, and not inclined toward war or disturbances of any nature. They are very muscular, and possess wonderful endurance. In color, they are lighter than our own Indians; their features are much finer and the expression of the face more pleasant.

At present, abundant labor is available at an average cost of 50 cents per day for a full-grown man, and, if employed regularly, from $10 to $12 per month (Mexican silver). Women and children do a great deal of the work on a coffee plantation, and during the picking season the major part of it, for which they receive a much smaller compensation than men. After a plantation is 5 years old, the owner can figure his labor at an average cost of 25 cents per day.

CAUTION TO UNITED STATES INVESTORS.

As there has been a coffee boom created in the United States by the real-estate agents, the tourists to Mexico, the agents of railroad and steamship lines, as well as many of the residents here engaged in other business, it may be well for me to suggest to the people of the United States not to believe all the exaggerated reports sent out from this country. I take this special means of doing so. Many of the reports are highly colored for a purpose. In the unsettled condition of the agricultural and laboring population of the United States, these boomers see their opportunity, believing there may be a disposition to believe that "there is a pot of gold at the end of the rainbow," and that all that is necessary is for them to come here and regain their failing fortunes without much labor. This is a serious error. As in all other countries, a man gains nothing here without early and late labor. As a rule, I would not recommend anybody to undertake coffee raising in Mexico without sufficient capital to pay for 250 acres of land, cash in hand, and have at least $5,000 in Mexican currency to meet the first year's expenses. In corroboration of the above statement, I quote from a report on coffee raising made to the British Government by Francis Stronge, secretary of the English legation at this city:

The intending planter will find a capital of £1,500 amply sufficient for requirements. It is far better to begin planting on a comparatively small scale and to gain thorough experience of the country and the business before embarking on an unnecessarily large undertaking. Some 250 acres is as much as a beginner should attempt to deal with, and even of this, only

200 acres should be planted with coffee, the remaining 50 acres being left under timber or applied to other purposes.

Good lands for planting can be obtained at from 18s. to £1 per acre, and sometimes cheaper. If, then, we take the mean between these two prices, 250 acres would cost £300, and the planter with £1,500 capital would still have £1,200 in hand with which to meet initial expenses and to maintain himself until his plantation came into full bearing. At first sight this sum will seem unnecessarily large, but in a country where credit is not easily obtained, and where the interest on borrowed money is very high, it is well to hold a reserve of capital as an insurance against unforeseen accidents. The failure of a large number of foreigners in this country may be attributed to neglect of this precaution.

Two or more individuals may club together and aggregate the above-mentioned capital, or more, and accomplish the same end, but by no means let any small capitalist undertake to cultivate over 100 acres in coffee and other necessary crops; this 100 acres may be made self-supporting the first year by cultivating 25 or 50 acres of it in coffee and other things in connection with chicken and hog raising, having a vegetable garden, and, by all means, a medium-sized nursery of twenty-five thousand coffee seedlings to be ready for the balance of the hundred acres.

CONDITIONS ESSENTIAL TO SUCCESS.

Nature has not overlooked the primary necessities for the beginner in Mexico. The yuca, or Mexican starch plant, is an excellent auxiliary for immediate use; half an acre of it will feed a good-sized family and fifty peons besides. The prospective investor must banish entirely the idea of engaging the services of a stranger to this country who has read somebody's book on coffee, gone through plantations on railroad cars, or of a late arrival from Ceylon, West Indies, or Liberia. These men may know very well about the country from which they come, but comparatively little of Mexico. Many failures in coffee growing in Mexico originate from the fact that the manager did not know the physical conditions of the place, or the language, or how to manage the labor, and was a novice in the business here. Furthermore, in this country all coffee districts are not alike. In some places it is imperative that the plant should have shade; the surroundings may be such that the location can not be cooled by any breeze, thereby subjecting the plant to the strong rays of the sun, especially where clouds are not constant during the dry season, or even the greater part of the year. Special conditions exist in the Isthmus of Tehuantepec, inasmuch as the tree can thrive well there in places even lower than it is found in other sections of the coffee belt; evenness of temperature is also a very important factor for the successful growth of the plant and the proper maturity of the seed. Where the thermometer marks a temperature below 55° F. at any time of the year, the cultivation of coffee should not be attempted, especially with the java and myrtle kinds; the mocha can stand more cool weather, but not lower than 50°. The book styled Mexican Coffee Culture, prepared with great care by J. Yorba, of this city, an American, affords much valuable information for the proper selection of the lands and the cultivation of coffee.

The labor question, as said by Mr. Yorba, is one of no little importance. The Indians, in the hot sections of the coffee belt, he says, can not be depended on altogether on account of their independent financial condition; even 75 cents (Mexican) a day is no inducement, but in the higher elevations and in the central plateau, plenty of labor can be had at from 35 to 50 cents a day. Treatment of workmen has also a great deal to do in obtaining their services. The Mexican peon must be studied and understood by his employer as much, if not more, than his horse. He is naturally a docile creature, but must not be treated harshly. He likes his small glass of aguardiente after or before work, and, at the same time, he has the utmost contempt for his master should the latter become intoxicated in his company. He does not expect any familiarity upon the part of his employer, and his pay must be forthcoming exactly when agreed, both in time and amount. He may deceive you time and again, about anything, with the utmost complacency, but should his employer disappoint him once, intentionally or not, in paying him the expected or agreed sum, he will leave as soon as paid, without warning, and not return. As house servants, I have had no better in the United States, especially the girls; they seldom leave the premises, and never without permission. I have found them polite, industrious, active, and honest.

RECEIPTS FOR MAKING COFFEE.

I send three receipts to show how coffee is made in Mexico for table use:

(1) For making black coffee, roast 1 pound of coffee until the inside of the grain is brown, then put a small teaspoonful of butter, same of sugar, and mix well together; then spinkle a little brandy over it and cover with a thick cloth; leave it for about an hour, then grind. Boil one quart of water; when boiling, put in coffee and remove from the fire immediately. Let it stand a few hours and strain through a flannel bag, and keep it in a stone jar until required for use, then heat whatever quantity is required. (Mrs. Ignacio Sepulvida.)

(2) Toast your coffee thoroughly, but be careful not to let it burn, then grind it, not too fine; prepare a large, deep pan, or dish, which will stand heat, heat this pretty warm, put what of the coffee grounds will be sufficient for the meal in this pan, pour hot boiling water over the grounds, and while they are hot cover up the pan; let it remain so for about five minutes, then strain off the liquid through a coarse cloth, and drink. This is a good plan when you find yourself without a coffee pot.

(3) A simple process of making coffee is to take a French coffee pot and place your ground coffee in its strainer; then pour boiling water over the coffee sufficient to fill the pot. To be sure as to the flavor, the strained fluid must be poured twice over the coffee. Make coffee only when ready to be served. Never burn the coffee in browning, but it must be medium browned, and covered during the operation, hence moderate heat must be applied.

THOS. T. CRITTENDEN,

MEXICO, *July 2, 1896.* *Consul-General.*

TAXATION OF COFFEE AND TOBACCO LANDS IN MEXICO.

During the last session of the legislature of the State of Veracruz, a tax of 6 cents per area (100 square meters) was placed on all lands planted in coffee and 5 cents per area on all lands planted in tobacco. This law goes into effect December 15, 1896. Numbers of Americans are now in this State engaged in the cultivation of coffee. The tax will be detrimental to their interests. As more will probably purchase land with the intention of planting coffee, I thought it well that the Department should be informed of the action of the lawmaking body of this State, and also give some information as to the cost of opening a plantation.

Land ranges in price from, say, $6 to $100 per acre;* the first price is for land in the back country, where transportation facilities are poor, the latter price ($100) for land in the districts where railroads give good markets and where coffee is abundantly grown. To give an idea what a beginner has to contend with in the way of taxation, it would perhaps be well to state cost of land, clearing and planting of same, and the expense of marketing after coffee is grown. I will assume that one buys the land at $10 per acre, which is about the right figure for land that can be reached without too much trouble, which gives the cost of an acre put in coffee the first year as follows:

Cost of land	$10.00
Cost of clearing	10.00
Cost of trees and planting	6.20
State tax, 6 cents per area	4.65
Total cost of 1 acre	30.85

As it takes about four years before the trees bear, there is a continual drain on the owner of the land for that length of time, without any cash returns, of $4.65 for State tax and from $3 to $6 per acre for weeding or keeping the land free of the rank vegetation that grows between the trees. I believe it will reach fully $10 per acre. This would add $40 to the $30.85 above mentioned. At the end of the fourth year, coffee trees in the Orizaba, Fortin, and Cordoba districts produce half a pound to the tree, or 310 pounds of coffee to the acre. As the trees are planted about 7 feet apart, I figure 620 trees to the acre; on this number, I base my calculations. After the trees bear, there is the following expense: For all the coffee sold, a federal tax (stamp) of 2 cents for each $20 or fraction, a municipal tax in the Cordoba district of about 1 cent per pound (this would be increased or decreased according to the indebtedness of the municipality), then, besides, there is an export duty amounting to nearly 1½ cents per pound. All these things must be taken into consideration by the buyer intending to engage in

* Although the consul does not so state, it is assumed that he uses the Mexican dollar throughout this report. The Mexican dollar was valued by the United States Treasury Department at 54 cents on July 1, 1896.

coffee culture. Under favorable circumstances, at the end of the fourth year, should prices remain as they now are (30 cents per pound), one would realize $93, as against an outlay of about $94.93, including price of land, but not interest on the outlay. The difference in outlay between the $30.85 first cost of land, etc., and the $40 to keep the land in order for four years (total $70.85) of $24.08 is expended as follows: At present price of labor for gathering the coffee, $4 per 100 pounds ($12.04 per acre) and about $4 per hundred more for drying, hulling, washing, etc. ($12.04 per acre). This brings the coffee to the marketing stage and really represents the actual cost of coffee ready for sale, and, I believe, puts the best light possible on the coffee-growing industry.

I attach hereto a clipping from the Mexican Herald, which gives a good interpretation of the law as passed, with some other pertinent information which I can indorse with but few exceptions, and they relate to localities, as, for instance, I understand that in some places trees produce an average of 3 pounds of coffee each, while in the districts I am familiar with, trees are planted 7 feet apart and half a pound of coffee per tree is the average.

CHARLES SCHAEFER,

VERACRUZ, *July 16, 1896.* *Consul.*

[Extract from the Mexican Herald.]

TAX ON COFFEE LANDS—THE STATE OF VERACRUZ DECREES A LAW TO WHICH COFFEE PLANTERS OBJECT.

The following decree of the legislature of the State of Veracruz has attracted much attention among persons interested in the culture of coffee in that State:

ARTICLE 1. A tax on coffee and tobacco shall be collected in future at the rate of 6 cents per area of coffee and 5 cents per area of tobacco, excepting nurseries or seed grounds.

* * * * * * *

ART. 7. From the proceeds of this tax the honorarium for collection shall first be deducted and the balance shall be applied as follows: Eighty per cent for the public schools of the municipality in which the plantation is situated and 20 per cent to the general treasury of the State.

ART. 8. Collectors of this tax shall receive 5 per cent commission, exclusive of the extra 30 per cent collected on behalf of the federation. The treasurers of the public-school fund shall credit themselves with a commission of 3 per cent on the 80 per cent applied to that fund.

ART. 9. Failure to declare a plantation or misstatement as to its area subjects the owner to triple duties, but the 30 per cent federal shall not be increased. In case the number of areas be understated, the fine shall only apply to the area not declared.

ART. 10. Total or partial destruction of the plantation shall entitle the owner to reduction or exemption from tax.

The area is in 10 by 10 meters, or 100 square meters, containing usually 11 coffee trees, as 3 by 3 meters is the space ordinarily allowed for each tree. The tax of 6 cents, plus the 30 per cent federal, equals 78 cents per area, or, say, three-fourths of a cent per tree per annum, computed from the day of planting, not from the date of production.

A coffee plant, according to locality, begins to produce the third or fourth year after planting, so that the planter will have to pay this tax three or four years before he receives any

return, if he ever does receive any, for his enterprise may fail through excess of wind, excess of rain, drought, low prices, a fall in the exchange premium, etc.

It will easily be seen how problematical are the profits of a venture of this kind. In any case, there can be no profit under five or six years, when, with luck, the heavy expenses of planting may be written off. Yet, during all these years the planter has to pay this coffee tax.

This tax in question amounts to $7.80 per hectare (about 2½ acres) and is charged on those who plant. Those who let their lands lie idle are exempt. Why? The tax amounts annually in many cases to nearly the original value of the land, for coffee lands have been and can still be bought in the State of Veracruz for from $8 to $10 per hectare.

The relief afforded by article 10 is cold comfort. Nothing can exempt from the tax but the death of the tree. The question of the goodness or badness of the crop has nothing to do with the tax. The fact that the land being in coffee causes the tax to be levied.

The former law governing the coffee tax was issued June 3, 1890, and, though not calculated to encourage what Mexico most needs, namely, increased exports and improvements in agriculture, is yet better than the new law. The tax was based on estimated production for the year at the rate of 40 cents per quintal of coffee. The probable crop of each district was estimated according to rainfall, climate influences, class of land, and altitude above sea level, whereas the new law takes no account of all these varying conditions.

The exemption on nurseries means nothing to the planter. A single area is more than a large planter needs, so that the relief amounts to only 6 cents per annum.

REBATE ON NEWLY PLANTED LAND.

I have the honor to communicate that the tax of 6 cents per area, as reported by me July 16, has been rebated on all newly planted land. This tax will not be collected until the coffee tree is three years old.

CHARLES SCHAEFER,

VERACRUZ, *August 19, 1896.* *Consul.*

NEW COFFEE FIELDS IN COLOMBIA.

I have the honor to forward an account of the new coffee country of the Sierra Nevadas of Santa Marta. It has been found that coffee does well in that section, and large tracts of land are being secured for plantations. I am indebted to William Crane, esq., an American now growing coffee in the Sierras, for much of the information.

Until two or three years ago, the Sierra Nevada Mountains, whose snow-crowned summits are the first to meet the gaze of the traveler hitherward, had invited in vain the explorer, the miner, and the botanist; and the scanty knowledge of them gained by the Spaniards, in unsuccessful attempts to subdue their aboriginal inhabitants, had been forgotten.

At last, three hundred and sixty years after the settlement of Europeans upon these shores, the inhabitants are awakening to the fact that at their doors lies one of the most-favored districts of South America for the cultivation of coffee.

For many years, coffee has been grown in the interior departments, notably Santander, Cundinamarca, and Tolima, and its export from these departments has steadily increased for fifteen years, but the difficulties in the way of getting the crop to tide water or to a navigable stream have been a serious deterrent to a general development of the regions adapted to coffee culture.

The cost of carriage for several days' journey upon pack mules to reach the Magdalena River or some tributary, navigable only by rafts or canoes, and the loss and damage suffered in transit have made such inroads into the profits that would otherwise result from its production that, although the coffee is of a high grade, little attention was paid to its cultivation, until the sudden collapse of the market for cinchona bark drew the attention of commerce to coffee as the most available article of exchange for foreign importations.

Some effort has been made toward the improvement of transportation, many concessions have been granted for railways, and vast sums wasted in subsidies; but no considerable betterment is noticeable in the means of land or water carriage over those of a quarter of a century ago.

In the latter years of the last century, a single small plantation of coffee was established on the northern slope of the foothills of the Sierra Nevada, but was abandoned for two generations, on account of the low price and small demand for coffee of that time. This and a few small plantations in the lowlands were all that saved the entire region from being an unbroken wilderness.

The favorable reports of a few lookers about who have explored this range, or rather group, of mountains have attracted attention, and, latterly, beginnings have been made upon a dozen or more plantations, chiefly within a radius of as many miles from Santa Marta.

The conditions of soil, temperature, rainfall, and available water power can hardly be surpassed. While the greater part of the section is composed of slopes of greater or less steepness, little of it is so steep as to be unavailable for planting, and there are frequent intervals and high table-lands of considerable extent.

At a height of 2,500 feet, the mean temperature is 70° F., 80° and 60° being the maximum and minimum throughout the year. The climate is salubrious, and the European can perform a full day's labor without undue fatigue. All the vegetables and many of the fruits of the temperate zone flourish. Upon the northern and northwestern slopes, coffee is found growing wild in considerable tracts of the forest.

The supply of young plants in such profusion is of great value in the making of a plantation, shortening by a year or more the time which would otherwise elapse before a crop could be produced.

But perhaps the most important advantage which this region presents is its nearness to the excellent harbor of Santa Marta, to which port the product of plantations can be carried at trifling expense, and with no risk of loss

or damage. Santa Marta is a port of call for several lines of steamers, besides a regular trimonthly service of fruit steamers, soon to be made weekly.

While considerable tracts of the land near the port have been taken up, there still are hundreds of square miles of the public domain well adapted for coffee planting; and the land laws of the Republic are very liberal, offering equal conditions to native and foreign settlers.

The quality of coffee grown here is fully equal to the best grades produced in the country, and as an indication of the duration of a plantation, the old plantation before mentioned may be cited, for, although no care and but trifling expense have been bestowed upon it during at least half a century, the present owner still gathers from the portions not smothered entirely by forest growth, enough fruit to give him a profit over maintenance of plant, while employing only the most antiquated and crudest methods of preparing the crop for market.

JOHN BIDLAKE,

BARRANQUILLA, *June 5, 1896.* *Consul.*

GOLD DEPOSITS IN NICARAGUA.

According to an official map, there are fifteen hundred rivers and creeks in Nicaragua, five hundred of which are north of the Prinzapulca River and east of the meridian 85° 30′ west from Greenwich.

Gold was discovered in northeastern Nicaragua in November, 1888, and it is said that it may be found in the washings of any of the five hundred streams in that section. Many of these washings show but little more than color.

Along the Prinzapulca and some of its upper affluents, however, rich placers have been found, several very small pockets having yielded from $3,000 to $20,000 each. The annual shipments of gold dust from the Prinzapulca region are generally estimated to have averaged $150,000 since 1888. At least two-thirds of the gold gathered in the district finds its way to Bluefields.

The records in this office show shipments of gold dust from Bluefields during the last four years as follows:

Quarter.	Value.	Quarter.	Value.
June, 1892	$10,387.56	September, 1894	$18,887.31
September, 1892	26,885.39	December, 1894	20,392.87
December, 1892	15,460.87	March, 1895	32,126.51
March, 1893	19,158.63	June, 1895	23,095.74
June, 1893	21,019.82	September, 1895	47,960.14
September, 1893	33,268.38	December, 1895	46,020.18
December, 1893	23,535.84	March, 1896	22,731.84
March, 1894	25,941.66	Total	413,604.29
June, 1894	26,731.55		

Shipments without consular invoices, but properly certified to by merchants, are made from coast settlements lying north of Bluefields. Such shipments are not reported to this office.

The Government imposes an export tax on gold of 1 sol (49 cents in United States currency) per ounce. Gold entering Bluefields is subject also to the payment of a municipal tax of one-fourth of a sol (12½ American cents) per ounce.

Many parts of northeastern Nicaragua remain unexplored. The greater part of the country is densely wooded, and travel in most places is necessarily confined to the rivers. Many of the rivers are shallow and are filled with rapids.

At frequent points the very smallest canoes must be used, and even then long and, at times, difficult portage can not be avoided.

Gold hunters report that bananas, plantains, and various fruits may be found in many places, but that there is a scarcity of game. All provisions must be procured on the coast.

An exploring expedition bound for the head waters of either the Prinzapulca or Rio Grande and gotten up to make an earnest and a systematic search for gold should be supplied with sufficient flour, rice, beans, bacon, canned meats, lard, and coffee to last from four to six months. The expedition should be properly manned, as there are many places at which the canoes and supplies must be dragged or carried long distances. Under the most favorable conditions as to season and weather, explorers in northeastern Nicaragua must expect to experience uncommon exposures, fatigue, and other hardships. It is a section in which inexperienced gold seekers are apt to become disheartened, and one in which veterans will find that health and hardihood do not make up for a scarcity of store provisions.

Auriferous ores have been discovered near the heads of the Pis Pis, Banbana, and Tunky rivers.

One of the most valuable of these mines is named Siempre Viva, and is situated near the Pis Pis River.

The character of its vein is described by Mr. Courtenay De Kalb, a mining engineer, as follows:

The vein consists of two parts, a hard quartz and a softer argillaceous material, with seams of iron oxide, resulting from decomposed pyrites, lying on each side of the quartz portion and traversing it in many places.

The vein extends throughout the entire length of the grant, 3,360 feet. In width, it varies from 5 to 9 feet, maintaining in most places, however, a width of 7 feet.

The hard-quartz portion of the vein is uniformly 4 feet wide and contains the greater quantity of the gold in the vein. The softer portion of the vein, however, contains from 5½ to 6½ pennyweights of gold per ton, so that it would necessarily go to mill with the quartz.

There is a distinct clay selvage between the vein and the foot wall and in many places between the vein and the hanging wall.

The upper portion of the vein is thoroughly oxidized by atmospheric agencies, but, below water level, the quartz and argillaceous portion of the vein are impregnated with sulphide of iron. The upper portion of the vein, accordingly, is "free milling" and will yield no concentrates of value, while that portion below water level will yield large quantities of concentrates, which will carry a very considerable part of the gold contents of the vein.

The walls are generally well defined, although the hanging wall at times merges to some extent into the softer portion of the vein.

The foot wall is of diorite and the hanging wall is of metamorphosed shale, with very imperfect cleavage.

Both hanging and foot walls deteriorate rapidly upon exposure to the air, and in the upper portions are already highly decomposed. Hence, all workings must be securely timbered, with laggings behind the timbers in almost all situations.

Assays made on the ground are said to have shown gold varying from quantities unweighable on the scales used up to an ounce per ton of ore. According to the same report, assays of average samples, made with proper facilities in the United States, showed from 0.27 to 2.03 ounces of gold per ton of 2,000 pounds of ore. The average of all deep workings was found to be: Gold, 0.915 ounce per ton of 2,000 pounds; silver, 0.43 ounce per ton of 2,000 pounds. Mr. De Kalb reports that estimates of cost of working are very difficult to make in advance of actual experience in the country, but that the cost of mining merely ought never to exceed $1 per ton, and that with a competent superintendent and an experienced mine boss and timberman, aided by native labor, there is no reason why the cost of mining, including timbering, should at the most exceed $3.50 per ton. He does not state whether these figures represent Nicaraguan or United States currency.

The Nicaraguan dollar is worth but 49 cents in United States currency.

In relation to timber and wood necessary for construction purposes and fuel, Mr. De Kalb writes:

The whole eastern portion of Nicaragua is wooded, but the timber is generally scraggy and rather poorly developed, presenting a marked contrast with most parts of tropical Spanish America. The principal timber suitable for construction purposes around Siempre Viva is bastard red cedar and the ironwood. Both attain a very large size. Of the former, there are on an average forty trees to the acre, and of the latter, twenty-five trees to the acre.

The bastard cedar is soft grained and easily worked. It is suitable for all purposes where strength is not requisite. The ironwood is very hard and durable, and will be particularly valuable for timbering the mine and for the framework of the mill and other buildings. It also makes an excellent charcoal.

There are many trees suitable for fuel, among which the kerosene tree is prominent.

The guava tree, similar to the capirona of South America, is also moderately abundant, furnishing a fuel almost as good as hickory.

Wood, however, is not sufficiently abundant to furnish fuel for more than a very few years for steam for large works.

Regarding transportation, he writes as follows:

The existing conditions of transportation are of the most primitive sort, goods coming by canoe to the head of navigation, and thence being packed on men's backs. The route now followed by goods from the United States is:

(1) By steamship from New Orleans to Bluefields.

(2) From Bluefields to Prinzapulca, 90 miles, by schooner.

(3) From Prinzapulca up the Prinzapulca and Banbana rivers to Tunky, in large canoes, about 150 miles. In this distance, there are two very considerable rapids to be crossed, which sometimes require a portage to be made. Time required, eight to thirteen days.

(4) From Tunky, in small canoes to Morowass, a cache for the storing of goods, about 35 miles from Tunky. In this distance, there are upwards of eighty rapids, great and small, with three portages. Time required, three to four days.

(5) From Morowass, on men's backs, about 10 miles, to Siempre Viva. Time required, one day.

Prinzapulca is accessible by vessels of 6 feet draft. At high tide there are 7 feet 6 inches of water on the bar. Within the river there is 30 feet of water and a wide bay affording abundant anchorage ground.

The Banbana River is a tributary of the Prinzapulca on the north side, embouching about 30 miles from the latter's mouth.

In most places it has a minimum depth at low water of 2 feet, but at very low water there are two small rapids in addition to the two large ones; hence navigation of this river by steamers of small draft is impossible, except during moderately high water. This condition prevails at most seasons, except between January and June; so that during six months of the year steamers drawing 2 feet could ascend to the big rapids, about 15 miles below Tunky. The canoes—"pit-pans," in local parlance—used on the lower river are from 30 to 40 feet in length, the larger ones, having a cargo capacity of 2 tons, and being manned by seven or eight men.

The small pit-pans used in the rapids of the upper rivers are from 15 to 25 feet in length, having a capacity of from 300 to 500 pounds, manned by three to four men.

Mr. De Kalb estimates the cost of transporting 2 tons of freight from Prinzapulca to Siempre Viva as follows (United States currency):

Hire of 40-foot canoe, fifteen days (round trip)	$10.00
Canoe captain and six paddle men, to Tunky	62.00
Provisions and outfit of crew to Tunky	7.60
Six small pit-pans and six Indians, Tunky to Morowass	40.00
Thirty-five man loads to a ton, at $1.33 (2 tons), Morowass to Siempre Viva	93.10
Total	212.70

He suggests the cutting of a road for ox teams from Tunky to the mine, a distance in a direct line of not to exceed 20 miles, over which road, according to his estimate, ten oxen could haul a ton of cargo from Tunky to the mine in two days at a total cost of not more than $32.66. Mr. De Kalb's report was made in 1893. He advised the erection of a five-stamp mill and the keeping of careful records, so as to determine the advisability of the establishment of a larger plant. A three-stamp mill has been erected, and the owners of the mine have ordered a small steamboat for service on the Banbana River.

In 1895, Mr. O. O. Hill, a miner of several years' experience in Nicaragua, prepared a report on the Atlas group of mines, the group consisting of the Atlas, Gigantic, Tiger, El Capitan, and other mines, all of which are in the vicinity of Siempre Viva. His report is almost a literal repetition of the one made by Mr. De Kalb on the Siempre Viva mine. In each report, the geographical location is given as 13° 30′ north latitude and 84° 45′ west longitude, and the position of the vein is described as follows:

The strike or direction of the vein is north 84° east. Its dip near the surface in several places is 17° to the west, but it changes to an almost vertical position lower down, as is shown in Tunnel A and the lower part of shaft No. 1. Also, at cuts Nos. 3 and 4 it is nearly vertical.

There is a difference in the reported widths of the two veins, Mr. De Kalb placing that of Siempre Viva at from 5 to 9 feet, "maintaining in most places, however, a width of 7 feet," while Mr. Hill states that the Atlas ledge "varies in width from 12 to 40 feet, maintaining in most places a uniform width of 20 feet."

This difference in width, however, does not appear to make one claim more valuable than the other, the number of estimated cubic feet of ore being exactly the same in the Atlas as in the Siempre Viva. Upon this point, Mr. De Kalb says:

Properly speaking, the size of the ore bodies now exposed is small. To have sunk a shaft to a sufficient depth to enable ore bodies to be measured would have required a longer time than was at my disposal. Tunnel A and shaft No. 1, however, have given evidence of the continuance of the vein, with its average richness, to a depth of 120 feet at least, and shaft No. 2 and open cuts Nos. 4 and 6 show that the vein maintains its size from the gulch between the two hills up to a height of 370 feet above the creek and for a distance of 640 feet at least beyond the summit.

If the vein extends down to the level of the creek at Tunnel A, with an average width of 7 feet, it would contain, from that point back as far as cut No. 6, 3,067,600 cubic feet, or 245,412 tons (weight of ore in place averaging 160 pounds per cubic foot). The question of such a permanency of the vein is yet to be proven, and it is of the highest importance that the future developments on this property should be directed toward the solution of this problem as quickly as possible. The permanency of the vein through the hill in which shaft No. 1 is located is certain, and the permanency of the vein to a depth of 100 feet in the big hill, judging from the cuts and shaft No. 2, is a reasonable hypothesis. Taking such a depth and deducting 10 feet for soil (soil on the vein is never more than 4 feet, and for considerable distances the vein is exposed on the surface), the volume of ore that would result would be 1,080,800 cubic feet, or 86,465 tons.

Treating the same subject, Mr. Hill writes as follows:

Properly speaking, the size of the ore bodies now exposed is large. The vein, as it continues along its easterly course, increases in size until it reaches a width of 40 feet 500 feet away. The vein in the tunnel has a width of 15 feet. Tunnel A and shaft No. 1 have given evidence of the continuance of the vein, with its average richness, to the depth of at least 110 feet, and cuts Nos. 2 and 3 show that the vein maintains its size up to a height of 370 feet above the creek and for a distance of 640 feet at least beyond the summit. If the vein extends down to the level of the creek at Tunnel A with an average width of 12 feet, it would contain, from that point back as far as cut No. 3, 3,067,600 cubic feet, or 245,412 tons of ore in place.

The question of such permanency is yet to be proven, and it is of the highest importance that the future developments on this property should be directed toward the solution of that problem as quickly as possible. The permanency of the vein on the hill, in which shaft No. 1 is located, is certain to the depth of 110 feet, and that it will continue both ways from cut No. 2 back to cut No. 3 is a reasonable supposition. Taking such a continuation for granted, the volume of ore that would result would be 1,080,800 cubic feet, or 86,465 tons of ore.

The character of the Siempre Viva vein and ores, as reported by Mr. De Kalb, has already been described.

With but slight variations, the same description is given by Mr. Hill of the Atlas vein and ores. Mr. Hill, however, estimates the value of the ore at $15 per ton, while Mr. De Kalb places it at $23.

Mr. Hill's report regarding the cost of labor is the same as Mr. De Kalb's report, with the following exception:

Mr. De Kalb writes:

Employing native labor, I took out in one place (all "picking ground") 26 tons of ore in ten days with three men, at a cost of $22.30. In another place ("shooting ground"), very hard quartz, I took out in four days with two men 10 tons of rock, at a cost of $8.56.

Mr. Hill writes:

I took out 36 tons of ore, all picking ground, in cut No. 2 in five days with three men, at a cost of $12, using my usual vein.

Writing further upon the subject of labor, Mr. De Kalb says:

Labor is exceedingly scarce and inefficient, as is usual in Spanish America. The Indians are not to be counted upon at all, as they will only do odd jobs now and then.

"Mosquito men" from the coast towns are entirely unreliable, being disposed to mutiny whenever they are set at objectionable tasks. Furthermore, they have never had experience in handling tools, and are of no value in mining operations. The Nicaraguans, locally called "Spaniards," are the miners of the country. They are unskilled in modern methods, but they are used to mines and do moderately fair work. They are scarce in this region, as there has been no demand for labor; but they can be obtained from Segovia whenever desired.

Ruling rates of wages are: Foremen, $1.33 (United States currency) per diem and rations; miners, 66 cents to $1 (United States currency) per diem and rations; helpers, 55 to 66 cents (United States currency) per diem and rations.

Segovian miners can be brought down the Wanks River to the Wass-puk, and thence up the Wass-puk and Pis Pis to Siempre Viva.

In working this property on a large scale, it would unquestionably be economy to use only imported North American labor in all situations.

According to all reports, the mines along the Pis Pis River are about 900 feet above the sea, the mountains rising 500 to 600 feet higher. The climate is cool, winds are incessant, malaria is apparently absent, and fever is not only of rare occurrence, but is invariably of a mild type. It is said, however, that "stomach complaints, resulting from improper foods, are not uncommon." Mr. Hill, who has been in the country many years, says:

The rainfall is very heavy, and continues with very little intermission from June until December. The first five months of the year constitute what is called the dry season, but heavy floods are a characteristic even of this period, and there are rarely any dry seasons of more than four weeks' duration. There are frequent spells of heavy rains, sometimes continuing almost without interruption for periods of four weeks or more, even in the dry season.

Bananas and plaintains grow wild in abundance, and pineapples, oranges, lemons, limes, beans, radishes, onions, turnips, tomatoes, corn, lettuce, egg-plant, okra, carrots, beets, sweet potatoes, yams, and cassava will thrive if given proper attention. Good pasturage is said to be abundant, and cattle, pigs, and poultry require but little looking after. The cattle are small, dressing from 300 to 400 pounds.

Mr. Hill summarizes the history of mining in Nicaragua as follows:

Mining has been carried on in Nicaragua for centuries in a desultory manner. Nearly four centuries ago, directly after the Spanish freebooters under Cortez overran Central America,

Spanish expeditions ascended the Wanks (or Segovia) River into the rich territory of Segovia, robbing and plundering the aboriginal or native mining settlements of that section, returning laden with gold, so the legends go. There is, however, no historical data sufficiently reliable to follow.

The present output of gold from Nicaragua is considerable. The exact amount is not known, as no Government record is kept. On the Pacific side of the main range, there have been heavy operations carried on for many years with English capital, and large mills are running steadily on gold ores.

There are no smelting or concentrating works in the country—nothing but "free milling" gold ores being treated.

On the Atlantic side, there are fourteen mills either in operation, in course of construction, or in transit. These mills are mostly small, the crushing capacity of the largest being but 30 tons per day.

In October, 1895, an article entitled "Rasgos descriptivos de la Republica de Nicaragua" was published in Diario de Nicaragua, the official organ of the Republic. The tenth section of the article is headed "Reino Mineral," and in substance is as follows:

Nicaragua possesses rich mines of gold, silver, copper, iron, zinc, opal, coal, gypsum, marble, white and brown limestone, alabaster, slate, alum, sulphur, saltpeter, etc. Besides the great but improperly developed mineral wealth of the mountainous regions, many parts of which, unfortunately, have not been explored, there is an abundance of auriferous ores in the districts of Nueva Segovia and Chontales.

The greater part of the gold which is exported from Nicaragua is produced in these districts.

The gold mines worked with the most proficiency are in the mining district of La Libertad, in Chontales, but even there, much of the machinery used is of antiquated type. The ore in this district runs from 5 pennyweights to 2 ounces of gold per ton, the gold being from 15 to 20 carats fine.

The mines in the district produce as follows:

(1) San Juan de Coridad, 15 carats; half an ounce per ton; 30 to 40 ounces of gold per month.

(2) Babilonia, 16 to 17 carats; one-fourth to half an ounce per ton; 100 to 200 ounces per month.

(3) Los Angeles, 14 carats; one-fourth of an ounce per ton; 30 to 40 ounces per month.

(4) La California, 14 carats; one-fourth to half an ounce per ton; 30 to 40 ounces per month.

(5) El Escandalo, 15 carats; one-fourth an ounce per ton; 150 to 200 ounces per month.

(6) Santa Elena, 17 carats; one-fourth to half an ounce per ton; 140 ounces per month.

(7) La Esmeralda, 18 carats; three-fourths of an ounce per ton; 100 to 200 ounces per month.

(8) El Tope, 19 to 20 carats; one-fourth to half an ounce per ton; 100 ounces per month.

(9) El Chamarro, 16 to 17 carats; one-fourth to half an ounce per ton; 100 to 150 ounces per month.

(10) El Jabali, 71 grains to three-fourths of an ounce per ton; 200 to 300 ounces per month.

(11) San Miguel, 1 to 2 ounces per ton; 30 to 40 ounces per month.

(12) Santo Domingo, half an ounce per ton; 50 to 100 ounces per month.

(13) San Gregorio, richness of ore unknown; 100 to 200 ounces per month.

At Bocoa, in Chontales, two gold mines are worked in a desultory manner. One produces 200 and the other 128 ounces of gold per year.

In the department of Nuevo Segovia, gold mining is carried on to a considerable extent, but, owing to the poor condition of the roads, it is extremely difficult to get machinery to the mines. In consequence of these disadvantages, ores are not worked unless found to yield at least 1 ounce of gold per ton.

The mountains and nearly all the small rivers in Nueva Segovia contain more or less gold, silver, copper, zinc, tin, antimony, lead, and other minerals, samples of which were exhibited at the last exposition at Paris. It is to be deplored that the mineral riches in this territory have so long been permitted not to enrich man.

With the exception of two mines—Macuelizo and Dipilto—all the mines in this district which once gave to the old Spanish colonies great quantities of silver, have been abandoned, owing to the preference for gold.

In the mining districts of Jicaro, Murra, Los Eucinos, and Las Vueltas, not less than twenty mines have been abandoned for want of proper machinery. Other mines have been abandoned for like reason in the mining districts of Quillali, Telpaneca, San Juan, and El Pericón.

In the district of Cuje, where the roads are remarkably good, the mines can not be worked, owing to the scarcity of water power.

There are gold mines in Segovia and Chontales which were worked years ago by the Spaniards. The Spaniards also worked mines in the Prinzapulca and Wawa regions, on the Atlantic coast.

An important geological study of the Prinzapulca country has been made by Dr. Bruno Mierisch, who analyzed thirteen specimens of ore found in the mining districts of Cuicuina, La Concepción, El Dorado, Pis Pis, and Cuenca del Cucalaia. Mines at all these places are in operation. According to the report of Dr. Mierisch, many of the ores examined contain from 1 to 1½ ounces of gold and 1 to 1½ ounces of silver per ton of 2,000 pounds.

It is claimed that ores in the district of Old Matagalpa have run as high as 8 ounces of gold to the ton.

The richest gold ores in the country probably lie to the east of the central cordillera and among the hills in which rise the many streams flowing toward the Atlantic.

The sands and gravels in these streams bear strong evidence of the existence of rich veins of gold in and about the hills among which the streams are fed. All of this territory is virtually uninhabited, and in all probability most of its rich treasures will remain undisturbed until the advent of foreign immigration. With a good system of wagon roads in Matagalpa, copper, iron, and lead mines might be profitably worked.

At the Paris Exposition one hundred and fifty-three specimens were exhibited of gold, silver, nickel, copper, lead, zinc, antimony, tin, arsenic, marble, opal, granite, etc., all of which came from Segovia.

Mercury has been found in small quantities near Lake Nicaragua.

Gold, silver, salt, gypsum, slate, black and white marble, granite, and coal exist in the mineral district of Santa Rosa, in the department of Leon.

Deposits of coal 7 feet in thickness have been found near Somotillo, in the department of Chinandega. Crude sulphur is found at the volcano of Chinandega. Limestone, gypsum, slate, marble, and small quantities of coal exist at various points on the Pacific.

The surveys of mines in the country, whether conducted by the Government or by private individuals, have revealed but a small part of the mineral wealth of Nicaragua, which, considering its size, is one of the richest mineral countries in America.

Mr. J. Crawford, late geologist for the Government of Nicaragua, who spent ten months of nearly continuous exploration over an area of some 10,000 to 12,000 square miles in the uninhabited wilderness and jungle that covers a large part of northeastern Nicaragua, writes as follows:

The region in northeastern Nicaragua chosen for description in this paper as typical of a few others in that part of the country, is a wilderness unoccupied by man, and, although this

locality is a part of Nicaragua, neither the Government nor the citizens of that country have even a vague conception of its importance and its truly great undeveloped wealth in valuable minerals and metals, timber, and agricultural lands.

The center of this chosen locality is about longitude 85° west from Greenwich and latitude 14° north, and the area embraces the head waters of Nawawass, Wilson, Loccus, Umbra, Waspoopoo, Morowass, Lang Sang, and Daka creeks, and Washpook River, confluents to Rio Wanks, or Coco, River, and also the line of "cerros," about 60 miles long, just south of the Washpook River.

Mr. Crawford's report was published in the December, 1893, bulletin of the Bureau of the American Republics.

Mr. Hill went to Chicago a few months ago and succeeded in organizing a corporation known as the Pan-American Mining and Milling Company. This company, of which Mr. Hill is superintendent, now owns the Atlas group of mines, and has erected a twenty-stamp mill, a sawmill, and machine shop, and is making other extensive and valuable improvements. The capital stock of the company is $1,000,000.

Other mining properties in the vicinity of the Siempre Viva, and supposedly of equal value, are the Jupiter, Tunky Ben, and Father Damon.

It is not unreasonable to suppose that the ores in these mines are no richer than those of many other discovered and undiscovered mines in the Cuicuina, Wawa, and other districts in northeastern Nicaragua.

The report is that for a two-thirds interest in Siempre Viva, a New York capitalist recently offered to expend $150,000 on the mine and to give the owners $75,000 cash, but that the offer was refused.

I do not advise people to either purchase mining stocks or rush to Nicaragua in search of gold, but I believe that a live agent might be able to sell considerable mining machinery and supplies in the country.

THOMAS O'HARA,

SAN JUAN DEL NORTE, *June 9, 1896.* *Consul.*

BANKING IN NICARAGUA.

At a recent meeting of the directors of the London Bank of Central America, Limited, a report was prepared "to be presented to the shareholders at the third ordinary general meeting on Tuesday, the 14th of April, 1896."

It was reported some time ago that a company had been organized in Minnesota to do a banking business in Central America. The newspaper in which I read the report expressed the opinion that nothing would increase American trade in Spanish America more than the establishment of an American bank in each of the principal cities in Central and South America. However anxious American bankers may be to widen the fields of American commerce, American banks are not likely to be established for the mere sake of extending the sales of American goods in these countries. Bankers are primarily interested in knowing whether the banking business in such countries pays or not.

The head office of the London Bank of Central America is in London, but its business is done in Nicaragua and Salvador. It has an authorized capital of £600,000, in shares of £10 each. The subscribed capital is £260,000, of which £130,000 ($632,645) is paid up. There are 183 shareholders, but 5 holding in excess of 1,000 shares each. The total number of shares held by the 5 principal shareholders is 11,497.

The report submitted by the directors is as follows:

DIRECTORS' REPORT TO BE PRESENTED TO THE SHAREHOLDERS AT THE THIRD ORDINARY GENERAL MEETING ON TUESDAY, THE 14TH OF APRIL, 1896.

The directors beg to submit the balance sheet and statement of accounts for the year 1895, duly audited. The net profits of the year amount to £16,492 4s. 11d.; an interim dividend has been paid in September, 1895, of £3,000; thus leaving a balance of £13,492 4s. 11d. available for distribution, which the board recommend to be appropriated as follows:

	£	s.	d.
To payment of a dividend of 5 per cent for the half year ended 31st of December last, making, with the interim dividend, 8 per cent for the year.....	6,500	0	0
To reserve fund, increasing it to £14,000.....	1,500	0	0
To special fund, increasing it to £10,000.....	3,942	9	10
Balance to be carried to new account.....	1,549	15	1

By order of the board.

EMILE CHEVALLEY,
Manager and Secretary.

Accompanying the report is a balance sheet, as follows:

Balance sheet at 31st of December, 1895.

Debit.	Amount.			Credit.	Amount.		
	£	s.	d.		£	s.	d.
Capital issued, 26,000 shares of £10, £5 paid up	130,000	0	0	Cash on hand and at brokers	210,046	16	4
Reserve fund	12,500	0	0	Investments in London (consols and other first-class securities)	10,932	17	0
For depreciation in exchange	14,000	0	0	Bills receivable	141,602	5	8
Special fund	6,057	10	2	Loans, etc	95,646	6	8
Unclaimed dividends	615	3	0	Bank premises and furniture account	10,353	15	5
Deposits, current and other accounts	158,231	16	9				
Bills payable	3,413	1	6				
Notes in circulation	130,272	4	9				
Profit and loss, less interim dividend, £3,000 paid 1st September	13,492	4	11				
Total	468,582	1	1	Total	468,582	1	1

Contingent liability on bills under discount in London, £47,622 3s. 4d.

Profit and loss account for the year ended 31st of December, 1895.

Debit.	Amount.			Credit.	Amount.		
	£	s.	d.		£	s.	d.
To expenses at head office and branches	15,216	5	8	By balance brought forward	2,868	2	11
To interim dividend	3,000	0	0	By gross profit in 1895	28,840	7	8
To balance	13,492	4	11				
Total	31,708	10	7	Total	31,708	10	7

We have examined and compared with the above balance sheet and profit and loss account the London books and extracts from the books kept in Nicaragua and Salvador, certified by the respective managers; also statements as to the securities, cash, and bills in hand, certified in respect of each branch by two shareholders.

In our opinion, the balance sheet and profit and loss account, as compiled from the above information, correctly show the position of the bank at the date thereof, the profit having been converted into sterling at the ruling rate of the day.

PRATT & NORTON,
Chartered Accountants.

LONDON, *March 31, 1896.*

Neither the notes of Nicaragua nor the London Bank of Central America are redeemable in gold. As a consequence, either's note or bill for a dollar or peso is only worth what a silver peso will sell for in the open market, which is generally from 47 to 49 cents (United States currency). According to the valuation of foreign coins, as given by the Director of the United States Mint, the peso is estimated to be worth 49.3 cents during the present quarter.

The net profits of the bank in 1895, viz, £16,492 4s. 11d., amounted to $80,259.50 in United States currency and to $162,798.74 in Nicaraguan currency. The value of the notes in circulation, viz, £130,272 4s. 9d., is equivalent to $633,969.80 in United States currency and $1,285,942.80 in Nicaraguan currency.

In my dispatch of February 10, 1896, I reported that, according to a statement published in Diario de Nicaragua, the official organ of the country, the paper money in circulation in Nicaragua on December 31, 1895, amounted to $1,546,651.50 (Nicaraguan currency). This amount was divided as follows: Government notes, bills, and fractional currency, $759,627; London Bank of Central America bills and fractional currency, $787,024.50.

It was officially reported at the same time that the London Bank of Central America had on hand notes or bills of its issue to the amount of $440,475.50 (Nicaraguan currency). If these published statements were correct, more than half of the paper money in circulation in Nicaragua at the end of last year was that of the London Bank of Central America, and the circulation of paper money in the country, estimating the population at 375,000, was but $4.12 (Nicaraguan currency) per capita, equivalent to but $2.03 in gold.

I have not seen a statement of the circulation in Salvador of notes issued by the London Bank of Central America; but, if the total issue of the bank's notes is as stated in the directors' report and the notes on hand and in circulation in Nicaragua on December 31, 1895, amounted, as published in Diario de Nicaragua, to $1,227,500 (Nicaraguan currency), the Salvador circulation amounted to but $58,442.80 (Nicaraguan currency) in December last.

THOMAS O'HARA,

SAN JUAN DEL NORTE, *June 11, 1896.*

NEW CUSTOMS LAW OF HONDURAS.

Having heard considerable complaint of hardships and injustice in the new code of customs laws of Honduras among merchants, vessel owners, and officers engaged in trade between this country and the United States, I have thought proper to transmit a copy of said law, as appears in the Boletin Financiero, marked and inclosed herewith, and a translation of the same. Importers are of the opinion that this law will greatly reduce and almost prohibit importation of goods, not alone on account of the heavy fees allowed consuls, but also on account of the responsibility of vessels and officers, as will appear by the translation inclosed.

J. EUGENE JARNIGAN,

UTILLA, *July 7, 1896.* *Consul.*

[Translation.]

NATIONAL CONGRESS—DECREE 84.

The National Congress decrees the following reforms in the code of customs:

ARTICLE 1. The captains of all vessels entering the ports of the Republic are obliged to present to the commandant of the port, at the time of their arrival, three duplicates of the general manifest of the cargo which they have on board.

ART. 2. That document must fulfill the following conditions:

(1) It shall be written in Spanish when the vessel proceeds from a place where there is a consul of Honduras speaking Spanish.

(2) The name of the vessel, her nationality, where she proceeds from, her tonnage, and crew must be expressed thereon; and also

(3) Marks, numbers, number of packages (expressing their contents, according to bills of lading), and the consignee.

(4) It shall contain the sum of the packages and the number of tons which the cargo represents for the port, all of which must be certified underneath by the consul of Honduras at the port of loading.

(5) Stores and provisions shall be manifested, and also the cargo in transit for other ports of the Republic, it being separately expressed what part of the cargo is for this or that port.

(6) It shall bear the date of its presentation.

The Executive may exact special regulations with a line of steamships which, for just motives, may not present the manifest of cargo in transit nor the signature of the consul of Honduras.

ART. 3. All general manifest, not containing the above conditions, shall be returned to the captain, and operation shall be suspended until it is presented in due form, within twenty-four hours, without extension. If, after that time, it has not been presented, containing the required conditions, the administrator shall fine the captain from $50 to $500, according to the cargo.

ART. 4. The administrator shall inform the commandant by writing, whereupon he shall retain the ship's papers until payment of the fine.

ART. 5. After the payment of the fine, the ship may be allowed to continue her route, being merely allowed to take in fruit and landing her passengers and luggage; the landing of freight can, in no case whatever, be effected, unless the manifest contains all the established formalities.

ART. 6. The captain must present, together with the manifest and in perfect accord with it, a check book containing all the cargo for the port in which he is.

ART. 7. The landing of freight is only allowed between 6 a. m. and 6 p. m., save on an express order from the Executive or from the authority appointed by him to grant it at other hours. Freight is not allowed to be landed anywhere except in those places designed for that purpose. A guard shall be present at the landing, who will take note and check off all parcels deposited on the wharf or on the beach.

ART. 8. The commandant of the port shall keep a duplicate of the general manifest. He shall remit another to the administrator and send the third one to the general direction of the revenue by the first mail. The commandants shall send, at the end of every month, a form with the maritime movement of the port, containing the class of vessels, where they proceed from, their tonnage, and the number of packages on the manifest.

ART. 9. All packages landed without being manifested shall be seized as contraband, unless it is proved before the administrator that they were destined and consigned on the manifest for another port, and that it was landed by mistake. Excepted is the luggage of passengers, which shall be landed without being manifested, but which must be taken to the custom-house, to be there examined by the administrator before delivery.

ART. 10. The officer on watch on the beach shall see that any package landed, whatever its size, is taken into the custom-house. All the cargo thus taken in shall be received by the officer in charge, who shall check, one by one, all packages as they come in. In the case of the landing of heavy pieces of machinery, lumber, or such like, which, on account of their weight or bulk, could not get inside the storehouses, they may remain outside; but the storekeeper shall take exact note of them and enter them in his books.

ART. 11. Immediately after the landing of freight being concluded, both officers (storekeeper and beach keeper) shall give account of their checks to the administrator, who shall compare them with one another and with the ship's manifest, verifying any difference which may exist.

ART. 12. The storehouse keeper shall keep a book authorized by the general direction of the revenue, in which he shall, daily, enter the items of freight coming in and going out. On the last day of every month said account is to be balanced, the goods in bond being then compared with the balance on hand, in presence of another employee designated by the administrator. Duplicate documents are to be formed of the operations, one to be remitted to the administrator and the other to the general direction of the revenue. The storehouse keeper who should not have wound up the operations of the preceding month and balanced his accounts shall be liable to a fine equal to the half of his salary.

ART. 13. All vessels, of whatever size (even small craft), with a crew, sailing or anchored in Honduranian waters, are obliged to have a red light in the most conspicuous place from 7 p. m. to 5 a. m. The vessel which does not comply with the above shall be chased and seized as a smuggler, unless it is proved that she is carrying on a lawful traffic; but at all events and only for the fact of not having a light, she will have to pay a fine of from $5 to $100, which shall be imposed by the administrator, taking into account the capacity of the vessel.

ART. 14. The consular invoices are established according to the following system: All merchants or commission merchants shipping goods to Honduranian ports must present to the consul, vice-consul, or consular agent of Honduras, of the place from which the goods are shipped, four copies of an invoice expressing: (1) The place where the goods are shipped from, the date, the name of the vessel on which they are to be shipped, name of deliverer of goods, and of the person for whose account they are shipped, port of destination, and consignee; (2) mark or countermark, numeration of each package, number of packages, gross weight of every package, and quality of contents, specifying the object or material, without being

allowed to put in general cotton goods, woolen goods, hardware, or any other phrase as general as these; (3) the total value of the invoice, detailing that of every package, or lot of packages, of the same, whole; (4) a sworn and signed declaration by the party interested of weight and contents of packages stated in the invoice. This document must be in Spanish.

ART. 15. The consuls shall sign and seal at the foot of these invoices, lubricating and sealing every page when there are more than one, and they shall number the same. In case the consul should have any doubt about the weight and contents of the packages contained in the invoices, he may exact as proofs the original accounts of the sale.

ART. 16. Of the four copies presented, the consul shall keep one, shall return one to the party interested, and shall forward the other two, by the most expeditious way, to the administrator at the port of destination of the goods and to the director general of revenues at the capital, giving account at the same time of whatever suspicion he may have about the incorrectness of the invoices presented. At the end of every month, the consuls shall send to the general direction of the revenue a list of the invoices dispatched during the same.

ART. 17. Until the elaboration of consular rules and tariff, the consuls, vice-consuls, and consular agents shall charge as their fees, in the currency of the country in which they reside, thus:

For each set of manifests	$5.00
For each set of invoices, whose value does not exceed $100	2.00
For every $100 in excess	.10

ART. 18. Should there be no consul, vice-consul, or consular agent of Honduras at the place of shipping, they may be signed by any other consul or consular agent of any other republic of Central America or, failing these, by that of another friendly nation, the latter charging as provided.

ART. 19. All policies presented for inspection must detail in a clear manner the class or classes of goods contained in every package and shall be accompanied by a copy of the commercial invoice and of the respective consular invoice, with which in must agree.

ART. 20. If the merchant or his agent should not have the consular invoice, that addressed to the custom-house having arrived, the administrator may allow the registering to be made with that. In the case of having no consular invoice, the registering can only take place with the express permission of the Executive and with the assistance of another employee named by the administrator as adjunct to the computer. The party interested shall pay as a fine for having no consular invoice 10 per cent on the total of duties of those packages which do not have it (not mentioned in it), which fine shall be entered in the liquidation of the policy.

ART. 21. The administrators have the right to intervene in all registering and to make a counter registering when they judge it opportune. In each lot of packages having the same contents, at least over 20 per cent must be opened, and without exception all those that are of one kind. When it is found that the contents of one package do not agree with the declaration, all the packages presented for registering in the same policy must be opened.

ART. 22. When a difference should occur in a package, not exceeding 10 per cent between the weight taken in the custom-house and that indicated in the consular invoice, or when the contents of a package happens not to have been declared or to be classified higher in the tariff than the one declared, said package or packages shall be seized, and the parties interested shall be amenable to the laws.

ART. 23. It is prohibited to include in the same consular invoice goods for different persons.

ART. 24. No vessel having on board merchandise in transit for another port or for sale may anchor in ports which are not ports of entry or in any other points of the coast, save in case of distress only and strictly proved. For the mere fact of having failed to comply with the above, the captain or consignee of the vessel shall pay a fine of $50 to $500, which may be imposed on him by any administrator of customs.

ART. 25. In order that a vessel having goods may sell them in any port of the Republic, the captain shall ask a written permit from the administrator, who will grant it, unless he has justifiable reason to refuse it. The permit granted, the captain shall present a manifest of those goods he is going to land, and the landing shall be effected at the same time and at the place designated for that purpose.

ART. 26. All the dispositions which do not conflict with the present remain in force.

ART. 27. The present law will be in force within three months of its publication, with the exception of articles 7, 9, 13, 21, 25, and 27, which will be in force after one month.

Given in Tegucigalpa, in the Hall of Session, on April 7, 1896.

ENGLISH ROYALTY AND BRADFORD DRESS GOODS.

Under date of June 12, 1896, I reported to the Department* the efforts made by a local member of Parliament—James Leslie Wanklyn, esq.—to attract royal and fashionable attention to Bradford dress goods and to discourage the feeling which seems to invariably influence people of fashion that something foreign made is always better than something homemade. Of the large number of samples mentioned by me as having been forwarded to the Princess of Wales from which selections were to be made for the trousseau of the Princess Maud, two patterns were chosen.

One was of pure black mohair, with raised black, diamond-shaped figures (submitted by J. V. Godwin & Co., wholesale merchants); the second, a pure white mohair, with flowered effect (submitted by Milligan, Forbes & Co., wholesale merchants). The manufacturers' price for each cloth is about 60 cents per yard, and they would retail in the United States as an imported cloth at from $1.25 to $1.50 per yard. The advertisement will be utilized to the fullest extent by Bradford manufacturers and merchants, more especially for use in the home or domestic trade and the British colonies. I annex for the use of the Department samples of the goods alluded to, each of which, no doubt, may be given now the names of princess cloth, trousseau cloth, bridal cloth, wedding cloth, or some name identifying it with the royal event.†

Many interesting facts concerning the home prejudice against local goods have come to the surface in connection with this incident. It transpires that some Bradford goods had already been selected at a London draper's by the royal family simply on their merits and without knowing whether they were domestic or foreign. It has even been discovered that English dress goods have been imported into France, then exported by the French merchants to England, and sold as French goods, this being, of course, when certain styles and materials were in great demand. One of the most prominent manufacturers in Bradford had long been trying to induce his wife to have a gown made of his own goods, but in vain. His triumph can be imagined when, upon one occasion, she appeared fresh from the hands of her London dressmaker handsomely gowned in a fabric

*See CONSULAR REPORTS No. 190 (July, 1896), p. 568.

†Samples filed in Bureau of Statistics, Department of State.

designed and made by himself, which was on sale in London as "the latest French novelty."

If there be in this information any facts that may spur American manufacturers and distributors to renewed exertion, I shall be very glad. If England, "the workshop of the world," as it has been called, is not above resorting to an advertisement now and then to popularize her wares at home as well as abroad, why should not our own producers of the United States inaugurate some enterprise which would result in calling national attention to the intrinsic merit of their goods (as well as the design and finish) and thus arouse the national pride.

CLAUDE MEEKER,

BRADFORD, *July 4, 1896.* *Consul.*

GERMANY'S IMPORTATION OF UNITED STATES COTTON.

It will interest the cotton producers of the United States to know just how important a factor in the consumption of cotton this Empire has become during the last fifteen years. It will interest them also to know that any honest effort to increase the sales of American cotton will be met with favor. It was reported from this office recently that manufacturers wanted to come into closer relationship with planters.* That statement is as true now as it was then. Formerly, manufacturers bought from the planters direct, and doubtless would have continued to do so had their wishes in the matter of material and packing been met. What the manufacturers wanted and want now is cotton that will be all that is claimed for it and all that is demanded. Spinners prefer to have uniform grades. They believe these can be best secured by having the crop of each State kept separate. They prefer all Arkansas, Mississippi, or Georgia cotton to any mixture of two or more. They say that unmixed cottons card and spin better and more easily and that they give a better yarn. When it was claimed in a recent report that spinners still wanted to find a way to do business with the planters direct, the statement was based on years of intercourse with spinners. There was no desire to do anyone an injury or to belittle any efforts hitherto put forth to extend American trade. On the contrary, the statement had its origin in a desire to still further extend and secure that trade by making it certain that American interests would be cared for by Americans rather than by Liverpool, Bremen, or Hamburg agents, most of whom, even when employed by New Orleans and New York brokers, are Englishmen and Germans, who, selling—as they doubtless do—all kinds of cotton, have no more interest in the American product than to make it subservient to their own interests, setting over against it the products of India and Egypt for the purpose of reducing the prices to be paid American planters for their product. What Americans want to note is the fact that when Germans have anything to sell us, they send German agents to sell it or open branch houses

*See CONSULAR REPORTS No. 190 (July, 1896), p. 504.

in our country. They don't leave to Americans the task of pushing their wares. How true this is, the signs on Broadway, New York, and the business directories of our principal cities will show.

We are selling Germany more cotton every year. This is due to the eagerness of the Empire's demand rather than to any particular effort on our part to get in ahead of India or Egypt. The men who sell in Hamburg and Bremen would sell Indian and Egyptian cottons and leave American to force or find its own way did the former pay them the most paltry percentage over what they might get for the American. This not because they have any hostility to American cotton, but because their business is based on business principles rather than on sentiment.

Bringing planters and manufacturers together will eliminate this element; it will eliminate also much of the uncertainty as to demand.

How great the demand is the following figures prove:

Imports of cotton into Germany.

Year.	From—			
	India.*	Egypt.	United States.	Great Britain.
	Bales.	*Bales.*	*Bales.*	*Bales.*
1880	135,612	.....	452,287	127,444
1881	73,656	.....	551,864	150,325
1882	119,684	.....	387,082	221,078
1883	172,682	.....	542,190	308,515
1884	149,128	.....	384,318	327,834
1885	120,678	.....	483,887 †1,725	216,519
1886	137,581	.....	505,234 †377	234,336
1887	159,340	.....	707,418 †684	277,823
1888	190,244	.....	630,108 †2,028	236,846
1889	358,056	.....	1,088,854 †12,004	210,987
1890	500,598	.....	1,251,446	86,721
1891	577,220	55,960	1,632,240 †17,592	100,241
1892	495,393	124,235	1,544,841	100,058
1893	568,813	130,624	1,650,519	.....
1894	611,893	119,231	1,967,327	.....
1895	445,813	143,608	2,310,284	34,040

* The figures for India are somewhat doubtful, because certain quantities came in via Trieste and Genoa.

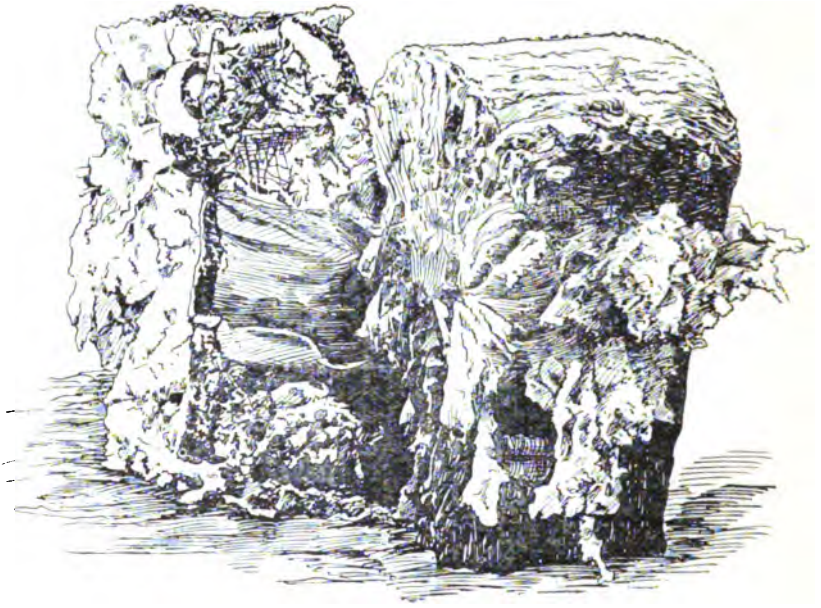
† These figures refer to the amounts of cotton waste imported. In relation thereto, I may say that a "mule" was invented in this city that operates very successfully in spinning a coarse yarn for bags, etc., out of waste cotton.

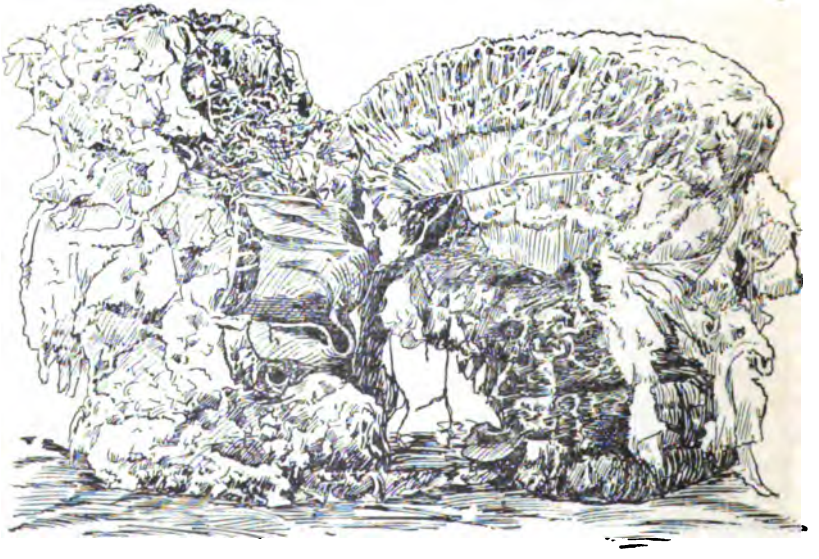
These figures show steady growth for the United States, proving that our cottons find favor. The increase quadrupled in fifteen years; England's exports hither decreased; India's remained about the same; Egypt's increased. Germany uses now (I translate in all this dispatch freely from my informant, one of the ablest cotton men in the Empire) 12 per cent of the American product, ranking only after ourselves and England.

If the ratio of increase in the last fifteen years continues, Germany will soon equal or nearly equal England. The greater part of the cotton comes to her via Bremen and Hamburg direct. She gets some via Liverpool, Havre, Amsterdam, Rotterdam, and Antwerp. The only great change in the importation of raw cotton into Germany and Austria is in the fact that up to 1890 German and Austrian spinners bought direct in the United States (from commissioners in New Orleans, Galveston, Charleston, Augusta, Mobile, Savannah, Wilmington, Memphis, Vicksburg, Shreveport, San Antonio, Eufala, etc.), letting the owners draw against bills of lading. "In my opinion," I still quote, "60 to 100 per cent of all the large German and Austrian spinners bought their raw cotton in this way, thereby sparing many commissions to middlemen and securing a better choice and classification of wares; besides this—a thing not to be undervalued or lightly passed over—they were brought into closer and friendlier relations with the commissioners. This feeling of friendship had developed so far that many spinners gave commissioners carte blanche in placing orders—*i. e.*, they trusted them to buy just such cotton at just such prices as the commissioners believed to be best suited to the class of yarns made by the spinners. In certain cases, this custom has continued to the present day. Naturally, this way of doing business had its defects and dangers, especially for continental spinners. Bills of lading were falsified, bad cotton was sent where good had been paid for, waste in some cases taking the place of good cotton, and sand helping to make the bales heavier."

The money losses were sometimes great; great, too, at times were the losses caused by carelessness and delay in delivery. The spinners found themselves forced into the markets of Liverpool, Bremen, and Hamburg to buy from brokers, free on board, payment to be made at once or on three months' time. In this way, spinners pay more, but get better guaranties. To-day 70 to 80 per cent of the cotton spun by Austrian and German spinners is bought in this way. The United States sends the Empire more cotton than ever before, but very little of it is sold direct to the spinners, but by means of middlemen. I have given the facts as I have found them. I may say that the person from whom I got most of them is a man who was most eager and urgent to find some way to bring spinners and planters together. It is perhaps hardly necessary to add that I know that American houses are represented at Bremen, Hamburg, Liverpool, and Antwerp. What I maintain is—not on my own authority, but upon that of leading spinners of Saxony, Silesia, and Alsace—that a way might be found to bring planters and manufacturers nearer together, thus doing away with at least one, two, or three of the intermediate charges, and dividing them among the parties most interested. How carelessly the interests of our cotton trade are looked after is proven by the wretched condition in which the cotton comes to this country.* In a report sent to the Department nearly two years ago, I called attention to this evil, sending photographs taken in this

*See CONSULAR REPORTS No. 160 (January, 1894), p. 140.





city. I submit some more taken a few months ago. If cotton is to continue coming so baled—so open and exposed to the dangers of dirt, rain, wind, and fire—it needs no argument to prove improper interest on the part of those putting the bales on this market.

J. C. MONAGHAN,

CHEMNITZ, *July 13, 1896.* *Consul.*

ENLARGEMENT OF UNITED STATES TRADE WITH FRANCE.

I am strongly of the opinion that it would be desirable to have a large building in Paris devoted to the free exhibition of American industries. Each merchant there exhibiting should have his agent always ready to spread a knowledge of his wares throughout the land. Apart from the primary outlay, the subsequent annual cost would be small. Such an exposition should embrace folding beds and that style of furniture for which the United States is celebrated, lamps, heating apparatus, machinery of all kinds, ice-cream freezers, refrigerators, canned vegetables and fruits, rubber goods, farming implements, etc. With such a depot to draw from, the United States could be fittingly represented at the large fairs held at different times in the various cities of France.

Could American wares, plus the duty and cost of transportation, be sold at a reasonable profit?

The fact that some of them are occasionally so sold here would seem to give an affirmative answer. If, in the face of very limited knowledge respecting our manufactures, one man now and then can sell enough of one product to make a living, it is fair to infer that with larger facilities of advertising, thus giving a larger acquaintance among the people of the things to be sold, many men could also thrive.

MACHINERY.

Under date of June 6, 1896, Mr. Patterson, the manager of the petroleum refinery of Bedford & Co. (Quai des Colonies, Rouen), has been kind enough to send me this letter:

Replying to your favor asking for information on the possibilities of introducing American machinery in this section of France, I beg to say that, from observation, it would seem to me that almost any line of improved machinery would find a ready market in close competition with either the English imports or the French manufactures; and I have no doubt, with the rapid strides and wonderful improvements that American manufacturers are turning out at the present day, the machines in themselves, irrespective, in some cases, of the slight additional expense there might be over competitors, would be conducive to their adoption in the vicinity of Rouen, and, in fact, the department of the Seine Inférieure. I believe the greatest industry is spinning and the stamping, etc., of cotton, and I have no doubt there is a good opportunity for some of our Southern manufactures of these lines to find recognition.

It would be very difficult to give in detail the requirements for this part of France, or even to name in detail the most advantageous articles or machines adaptable to the general requirements. I will, however, state that I think there would be a good market and opening for

our improved pattern economical steam engines, steam boilers, gas engines, planing and milling machines, lathes and turning machinery, forgers' tools and supplies, steam hammers, punching, beveling, shaping, and shearing machinery.

Something new in France would be the introduction of the cash register, the change receivers, automatic package conveyors, etc., such as are used in our general retail stores in the United States, and, in fact, any line of labor-saving devices which are practical.

The flour mills in France are in many cases operating with the old burr stone; and with the American system of to-day, with its rolls and general improvements, it would seem as though there is a possibility of a profitable introduction in this line.

Normandy being a great agricultural center, American manufacturers of this line of implements could certainly, by patience and exertion, be able to introduce their line of manufacture, as there are very few machines in use for thrashing and binding, or any field work, it being mostly done by hand.

A great importation of sewing machines has been made in the past two years from England, but very little from the United States. These machines are not as yet generally introduced, and I believe American competition would do well.

It would be difficult for me to give you a long report or clearer information on the present subject, which is extended more in the way of a suggestion, and I am fully convinced it would be greatly to the interest of American manufacturers who are desirous of opening up a commerce in France were they individually to communicate with you and learn the possibilities as regards their respective lines of manufacture. I know you would cheerfully render them the information. In this way, manufacturers could receive the exact information they require and undoubtedly more to their satisfaction than by means of a general report.

For your general information, I herewith inclose a small table showing the costs of entry from the United States, as compared with the costs of entry on the same manufactures from England. You will readily see from same that England is favored as to duty, yet very slightly, and it is my firm belief, considering the low rates of freight between American ports and Havre, or even Rouen, American manufacturers should be able to profitably compete in France.

Trusting the above information will be satisfactory and cover the points desired, I remain, etc.,

A. V. PATTERSON.

Costs of entry (duties) from the United States compared with the costs of entry from England.

Description.	Duty per 100 pounds.			
	From United States.		From England.	
	Francs.		*Francs.*	
Spinning machines	7.50	*$1.50	4.50	*$0.90
Steam engines:				
Under 250 kilograms	15.00	3.00	10.00	2.00
250 kilograms and over	9.00	1.80	6.00	1.20
Cotton-stamping machines	4.00	.80	3.00	.60
Steam boilers:				
Ordinary	6.00	1.20	4.00	.80
Tubular	9.00	1.80	7.00	1.40
Gas engines:				
Under 250 kilograms	15.00	3.00	10.00	2.00
250 kilograms and over	9.00	1.80	6.00	1.20
Planing machinery.				
Above 1,000 kilograms	7.50	1.50	.....	.....
250 to 1,000 kilograms	10.00	2.00	8.00	1.60
Under 250 kilograms	35.00	7.00	25.00	5.00

* Mr. Patterson has reckoned the franc at 20 cents in his reductions in this table; the true value is 19.3 cents.

Costs of entry (duties) from the United States, etc.—Continued.

Description.	Duty per 100 pounds.			
	From United States		From England.	
Milling machinery:	*Francs.*		*Francs.*	
Above 1,000 kilograms	7.50	$1.50		
250 to 1,000 kilograms	10.00	2.00	8.00	$1.60
Under 250 kilograms	35.00	7.00	25.00	5.00
American lathes:				
Above 1,000 kilograms	7.50	1.50		
250 to 1,000 kilograms	10.00	2.00	8.00	1.60
Under 250 kilograms	35.00	7.00	25.00	5.00
Turning machinery:				
Above 1,000 kilograms	7.50	1.50		
250 to 1,000 kilograms	10.00	2.00	8.00	1.60
Under 250 kilograms	35.00	7.00	25.00	5.00
Bolt and nut cutting and threading machinery:				
Above 1,000 kilograms	7.50	1.50		
250 to 1,000 kilograms	10.00	2.00	8.00	1.60
Under 250 kilograms	35.00	7.00	25.00	5.00
Punches:				
Above 1,000 kilograms	7.50	1.50		
250 to 1,000 kilograms	10.00	2.00	8.00	1.60
Under 250 kilograms	35.00	7.00	25.00	5.00
Shears:				
Above 1,000 kilograms	7.50	1.50		
250 to 1,000 kilograms	10.00	2.00	8.00	1.60
Under 250 kilograms	35.00	7.00	25.00	5.00
Leveling and shaping machinery:				
Above 1,000 kilograms	7.50	1.50		
250 to 1,000 kilograms	10.00	2.00	8.00	1.60
Under 250 kilograms	35.00	7.00	25.00	5.00
Flour-mill rolls	7.50	1.50	5.00	1.00
Grinding machinery	7.50	1.50	5.00	1.00
Agricultural implements	7.50	1.50	4.50	.90

CORN IMPORTS.

A leading grain broker has very kindly furnished me with the following details:

Since January 1, the following cargoes of corn have been imported into Rouen (up to May 9, 1896):

Date.	Name of steamer.	Quantity.
		Pounds.
January 14	Woodleigh	7,616,532
January 16	Vera	6,927,032
January 16	Tedmandale	5,726,758
January 31	Obendana	8,439,917
February 14	Eddystone	6,666,198
February 26	Daddington	5,954,133
March 13	Dovedale	8,559,444
March 28	Bellor	8,650,768
April 26	Hazelmoor	9,705,670
April 29	Marstonmoor	6,984,450
Total		75,230,892

The whole of this quantity of mixed and white American corn was brought by English steamers from New Orleans. Much more of mixed corn and white is brought over than of white alone. Each steamer brings from 400 to 600 tons of white, which is used for starch and seed purposes. The mixed corn is largely employed for horse feed and distilleries. When both the oat and the barley crops are failures in the cattle-raising regions of France, the corn importations are large and prices higher. The market value of corn at Rouen, during the time here stated, has varied from $1.60 to $1.80 per 100 kilograms (220.46 pounds). It pays a customs duty of 60 cents per 100 kilograms, which is to be added to the cost of freight and insurance.

TIMBER.*

In 1895, 222,000 tons of foreign timber were brought by sea to Rouen. No seaport anywhere offers such advantages as does Rouen for the reception, forwarding, and disposal of lumber. The brokerage fees are light. A standard (2.616 tons) of pine is assessed at 4 cents a ton for the first 1,000 tons. The duties upon timber were increased in 1892, but, despite this and in the face of great odds, the importations have steadily increased. We could compete with Russia and Norway in the matter of price, although transportation might be slightly against us. The demand for pine is constant, the ruling price favorable, and the cost of distribution by canal from Rouen to inland towns is very small.

COAL.

France consumes each year 12,000,000 tons more coal than she produces. England, Germany, and Belgium supply the deficiency. Cardiff coal has retailed in Rouen for $8 and $9 a ton. I paid last winter $10 a ton for anthracite coal. A new tariff has recently become operative, discriminating in favor of French mines, but it can have no appreciable effect upon imports, since, under the most favorable circumstances possible, France could not supply her demand. Evidently, merchants in other countries are satisfied with the profits from the sale of their coals in France. Is there not also a field here for us?

HORATIO R. BIGELOW,

ROUEN, *July 7, 1896.* *Consul.*

TRADE BETWEEN THE UNITED STATES AND GREECE.

I have the honor to inclose herewith a report on business relations between the United States and Greece, which Mr. N. D. Sourmely, of Piræus, has prepared and sent to me. Mr. Sourmely is one of the best-known merchants in Greece, and it may be that his suggestions will be found worthy of publication in CONSULAR REPORTS.

E. ALEXANDER,

ATHENS, *April 24, 1896.* *Minister and Consul-General.*

*The figures here given and in the following subdivision on coal are taken from the valuable report of Mr. O'Neill, British consul at Rouen.

REPORT OF MR. SOURMELY.

With the exception of the trade in currants, which increases every year, the commercial relations between the United States and Greece are insignificant. American manufacturers have totally overlooked Greece, leaving this country to be exploited by British and German manufacturers. This is much to be regretted, and I take the liberty of inviting attention to the following facts:

Of machinery—steam and gas engines, boilers, electric installations, pumping plants and house pumps, milling machinery, engineers' and machinists' tools, printing and lithographic machinery, cotton and wool spinning and preparing machinery, etc.—more than $350,000 worth are annually imported into Greece, chiefly from Great Britain, Germany coming second. It is a noteworthy fact that American machine tools are superior in quality and design to any British or German tools, and at prices comparing favorably. The only drawback is the difficulty in arranging terms of payment and the total absence of agents or representatives of American manufacturers to push the sale of their products.

In wood-working machinery, in which American makers excel, there are scarcely any imports from the United States. The demand for this class of machinery is growing in importance. Several German makers imitate in design, but never approach in quality, the American machines and sell these imitations here in large numbers.

In regard to iron and steel, I am not in a position to express any opinion at present, as I am not conversant with American prices current. I will later on study this question and report thereon.

The only American machines that are sold in Greece are the Singer sewing machines, and these are on the decrease, the Germans having succeeded already in palming off on the Greek public cheap imitations of "Singer" machines, and the English manufacturers are more actively pushing the sale of their products.

In hardware, locks and lock furniture, ironmongery goods, there ought to be a very large importation from the United States; but, actually, there is none. The importation of hardware and kindred articles from Great Britain and Germany exceeds in value the sum of $1,000,000 per annum.

For machinery in general, the usual terms of British manufacturers are one-third cash with order, balance on arrival of goods against bills of lading through their agents; to good firms, four months' credit is granted. The German makers' terms are one-fifth cash; balance by three, six, nine, and twelve months' acceptances, payable in Greece. For hardware in general, the usual terms are four and six months, and with first-class firms accounts current at 6 per cent per annum.

In fancy goods, novelties, and the like, there is a great trade done with Vienna, Paris, and London. I think American makers would easily master a good part of this trade.

American manufacturers would do well to turn their attention to the Hellenic markets, where profitable business is to be done. They must find reliable and influential representatives and offer fair prices and easier terms of payments, as already pointed out. They will soon be agreeably surprised and satisfied with the results.

N. D. SOURMELY.

PIRÆUS, *April 16, 1896.*

WALNUT GROWING IN EUROPE.

In answer to a letter from the Los Nietos and Ranchito Walnut Growers' Association, of California, of June 4, requesting information about the foreign walnut crop, I said:

Switzerland does not grow walnuts on a large scale, but almost every farmer in the valleys has a few trees scattered on his ranch and principally along the roadways. The annual output

is small and some years not sufficient to supply the home demand. In years of abundance, a good article of salad oil is made from walnuts. The trees are hardy and not subject to scale, blight, or other diseases, the only serious enemy of the walnut being late frosts, of which there were none this season. The principal walnut-growing districts of Europe are France, Italy, and Austria-Hungary.

I will at once take the necessary steps to obtain the information you desire, and within two weeks or so post you, if possible, on this season's crop outlook.

I now beg to inform the association, through the Department, that from reports I have received from the United States consuls at Frankfort, Vienna, Naples, Bordeaux, Marseilles, Castellamare, and Sorrento, I am able to report as follows:

Walnuts are, to a certain extent, as in Switzerland, grown all over Europe, but in most countries, such as Germany, Belgium, Holland, etc., the yield is small, and some years not sufficient to supply the home demand, the deficit being supplied from the more favored walnut-growing countries. Thus it will be seen that France, Italy, and Austria-Hungary are the only countries raising that article in sufficient quantities for export.

FRANCE.

The French walnut-growing districts are the departments of Dordogne, Corrèze, Lot, and the Grenoble district, in the department of Isère. The latter are of especially fine quality, being of the soft-shell variety, large, white meat, and running uniformly. These nuts yield the grower from 93 to 105 francs per 100 kilograms (about 8 to 9.18 cents per American pound). The latter price is for Grenoble nuts.

The crop in France this year is good. It compares favorably with former years and is as good as in 1895. The 1895 crop was above the average and that of 1894 below.

The principal points of export for France are Bordeaux, Marseilles, and Havre.

The trees in France are not subject to scale, blight, or other diseases. The orchards are mostly small and owned by farmers.

ITALY.

The Italian walnut-growing districts are the Neapolitan provinces around Naples, Castellamare di Stabia, and Sorrento. The points of export are Naples and Sorrento.

In Italy, this year's crop compares favorably with former years. Last year's (1895) crop was one-fourth less than a medium crop and somewhat inferior to the average.

The principal growing district is Piassio di Sorrento.

The trees are, to some extent, owing to climatic influences, subject to scale and blight diseases.

The walnuts bring on an average $9.25 per 100 kilograms, or from 4¾ to 5¼ cents per American pound.

The extent of orchards is the same as in France.

AUSTRIA-HUNGARY.

The walnut-growing districts of Austria are in the lower part of the Empire, or what is known as "Nieder Oestreich." In first line, comes what is known as the Steiermark, where the crop is a medium one; second, Mähren, a good crop; and third, Bosnia, where the crop prospects are excellent. Last year's crop was a light, medium one in the above-named districts, and the nuts, as a rule, are poor, not well filled, small, and of the hard, thick-shelled variety. In Hungary, the districts of Nagy, Bánya, and Grosswardein produce an excellent nut of good quality, large, white meated, and well filled, and, as my informant tells me, compares favorably with the French Marbeaux nuts. No figures as to prices are given.

The point of export for Austria-Hungary is Trieste.

Trees are hardy and not subject to diseases, as scale, etc.

WALNUT EXPORTS TO THE UNITED STATES.

In order that the California walnut grower may know where he has to look for competition and what quantities of walnuts are exported to the United States, I have copied and give below the points of shipment and the declared values of walnut exports in dollars (I am unable to get figures as to quantities) to the United States for the last two quarters of the years 1894 and 1895, these being the periods of the year in which walnuts are gathered and shipped, and as given in the United States Treasury returns for the above-named years:

Whence exported.	1895.	1894.
French.		
Havre	$50,832.39	$12,281.00
Bordeaux	156,579.01	82,282.00
Grenoble district	58,886.00	52,788.00
Marseilles	73,584.00	174,445.00
Italian.		
Castellamare di Stabia	2,624.43	71,809.32
Naples	10,256.00	19,755.85
Sorrento	34,076.00	(*)

* None.

Austria-Hungary is not credited with any walnut export to the United States. The only other country growing walnuts which exports them to New York and San Francisco that I know of is Chile. These, as a rule, reach New York and San Francisco in the month of August, and the only data I can find in the United States Treasury returns as to the walnut export from that source is that contained in the returns for the quarter ended September 30, 1894, in which Chile is credited with an export figure of $5,844.48 for that year. No figures are given for 1895, and I presume no walnuts were received.

EUGENE GERMAIN,

ZURICH, *July 14, 1896.* *Consul.*

IMPROVED APPARATUS FOR DYEING YARNS AND CLOTH.

It is a fact well known to various branches of the textile industries that the expense of unwinding weft yarns from the cops or warps from beams and the subsequent respooling forms quite an item of the cost of manufacture of textile fabrics. Not only time and labor are expended in these manipulations, but loss is also caused by tangled skeins and broken threads. The apparatus described in the following report overcomes these difficulties, for with its aid, cops, as they come from the mill, beamed yarns, and cloth rolled on cylinders can be evenly and quickly dyed through and through in the most economical manner.

The drum *A* rests on suitable framework or foundation and is connected by steam pipes with the hollow and perforated cylinder *B*. Into this cylinder, from 1,500 to 2,000 hollow and perforated spines *D* may be screwed, on which latter the cops *J* are placed. By means of the thumbscrews *E*, the cylinders can be quickly inserted into or removed from the arms *B*. The joint *F* admits both of raising and dipping the cop carrier from or into the movable vat *B*. The drum *A* is furthermore provided with a vacuum chamber and a compressed-air cylinder, which are connected with a reversible air pump by pipes *y*, and are controlled by the valve handles *G*. Pipe *x* leads to the tank *C* containing the reserve dyes (fig. 2).

The dyeing is done in the following manner: A vacuum is created by means of the air pump in about two minutes. During this time, the filled cop carrier *D* has been inserted and fastened between the two arms *B* (fig. 1) and lowered into the tank *B* (fig. 2), which contains the color. Instantly, after the opening of the vacuum valve G^1 (fig. 1), the fluid dye is sucked with great force through the cops, the perforated spines, and the cylinder into the drum *A*, where it is reinforced by proper strength by a concentrated solution drawn in at the same moment and by the same force from tank *C* (fig. 2). Then, steam is applied, and the dye contained in the drum *A* is pressed outward through the cop carriers and the cops themselves are carried back into tank *B* (fig. 2).

Again, the cop carrier is lifted from the tank, part of the surplus moisture sucked up into the drum by means of the vacuum, and the remainder blown out by compressed air. In the same manner, and by means of rolling tanks, mordants, as well as a soap bath, may be applied, and all other operations, such as washing, oxidizing, steaming, or finishing, performed without handling the single cops, which latter are thus preserved in their original and perfect shape and returned in excellent condition to the weaver.

All soluble dyestuffs, either direct or indirect, can be used by this apparatus, which is especially adapted for logwood and iron black and all indigo colors. Wool, cotton, flax, or any other fiber, cops, cloth, and beamed yarns may be handled in succession without the least change of machinery, and

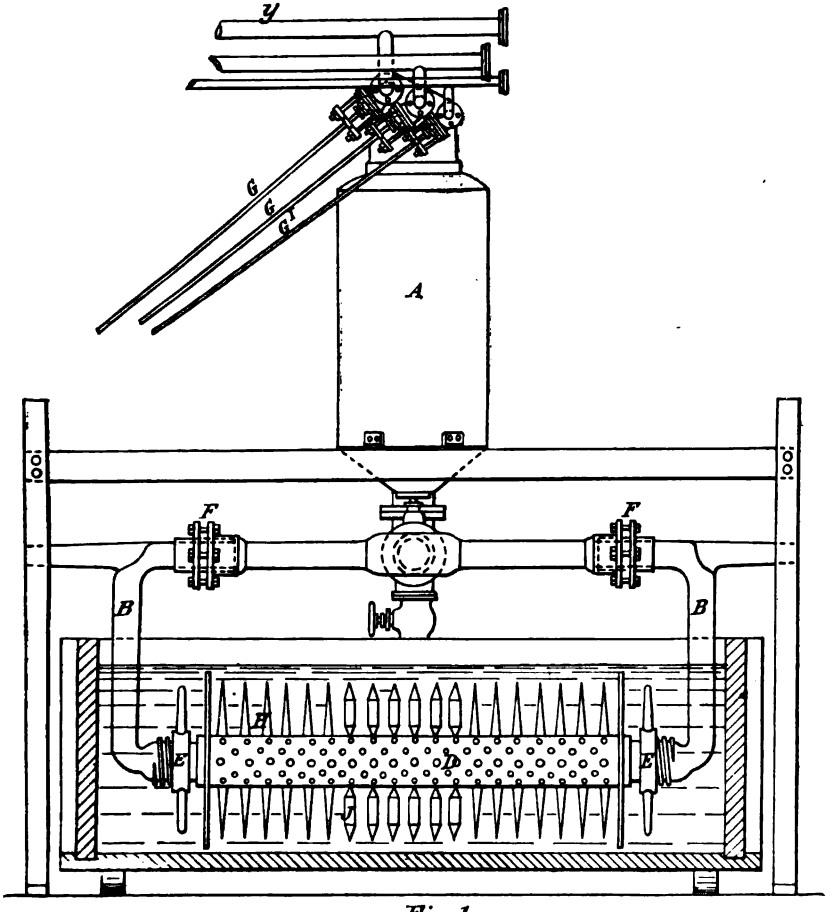


Fig. 1.

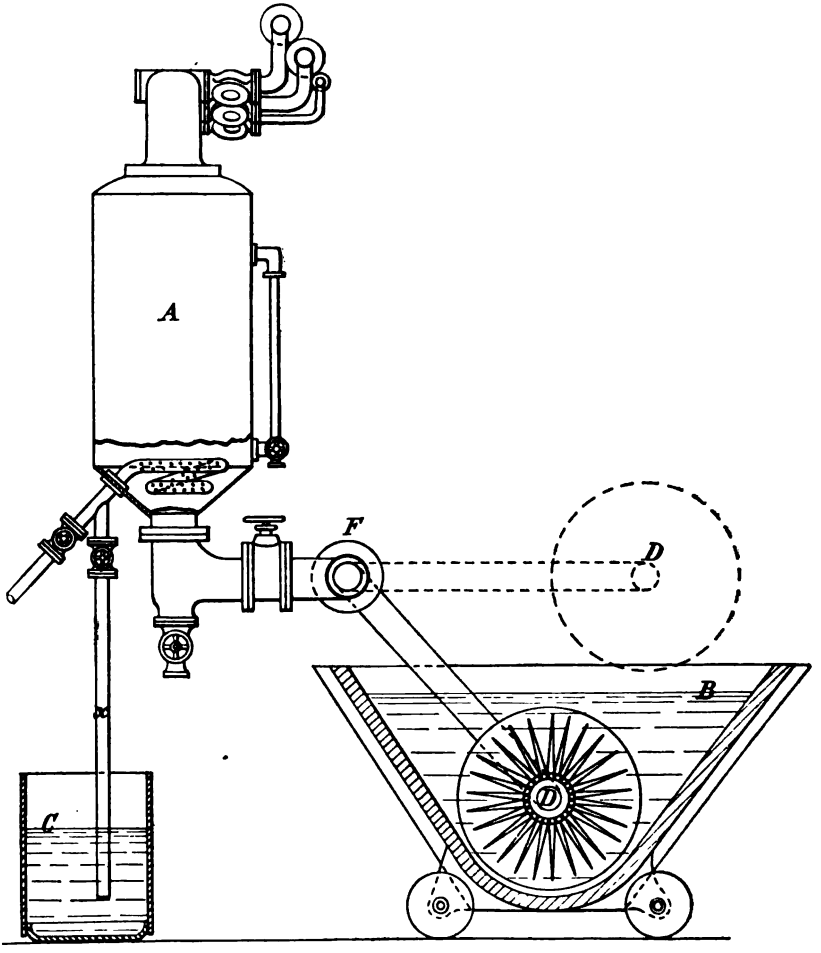


Fig. 2.

the most delicate fabrics rolled on cylinders can be worked without injury or loss.

Another valuable feature is this, that lots of 100 to 300 pounds of yarn and more, with certain improvements, are colored at one time and absolutely even and uniform, no matter how exquisite a shade of color may be required.

The loss of the often expensive dyestuffs is reduced to a minimum, and the expense of steam power is also very light, for a 7-horsepower engine will operate from five to eight machines, each of which is tended by one man, who can handle from 100 to 120 pounds of yarns in about eight minutes where a single-bath process is used. The vacuum produced by the air pump at the beginning of the operations is subsequently obtained by condensing with cold water the steam used for forcing the dye from the drum *A*, thus saving coal and wear and tear of the most expensive parts of the machinery.

Through the kindness of Mr. Hermann Schubert, one of the patentees and a proprietor of dye works in Zittau, I was enabled to see the apparatus in action, and have been informed by him and other experts that the saving to dyer and weaver amounted to nearly 4 cents per pound on middle-fine yarns and more on finer numbers. Their calculations are based on weekly wages of 6 to 8 marks ($1.43 to $1.96) for spoolers in the mills, and, as both the prices of labor and of nearly all dyestuffs are by far greater in the United States, the saving must be correspondingly larger in the latter country.

I feel certain that American mechanical genius can so improve this machine as to greatly increase its capacity, and thereby render it an instrument of great strength in the hands of the textile industrials of the United States.

ALFRED KRAUSS,

ZITTAU, *April 10, 1896.* *Consular Agent.*

GERMAN DYES FROM TAR.

It is hard to say just how much political economists and legislators have helped the German Empire to its present exalted place among industrial nations. Thus begins an article dealing with the Empire's aniline, alizarin, and other dye-making industries. There are direct and indirect evidences, however, that leave no doubt as to the aid afforded by legislative enactments. Iron, textiles, paper making, and workers in wood have undoubtedly been helped by higher tariffs to check the depressing influences of a too close competition from abroad in the home markets, and have been encouraged to make new efforts to find foreign fields for their surplus products. Many industries have contributed their share to the common weal. Among these, none so much, certainly none more than the factories producing artificial dyestuffs. Although these factories are practically only thirty years old, they have grown so large from small beginnings that they constitute to-day not only an important branch of the Empire's industries, but have borne a big part in helping to develop and enlarge the national welfare. The

object of these industries is to supply, artificially, what once was won from natural products; in other words, to take from tar a cleaner, cheaper, and more easily handled dyeing material. What was won from madder, indigo, dyewoods, insects, and mollusks is now made from stone-coal tar. Nor are the colors less beautiful or less lively. Since 1868, the year that England found out that the most important dyestuff madder—alizarin—was to be obtained cheaply, easily, and in large quantities from the carbon hydrogen of stone-coal tar, the madder fields of southern France have been turned to other more remunerative products than madder. The expensive cochineal colors are being produced cheaply, abundantly, and in excellent qualities from naphtha oils. In a few years, the cochineal industry will die down and be worth no more than is now the cultivation of madder. In place of the colors obtained from curcuma and yellow woods, chemists are getting as good, and in many cases better, and by far cheaper colors from naphtha. The red, blue, and green anilines used to-day, equal in brilliancy and fastness to the best of other colors, prove the great indebtedness of all textile industries to the science of chemistry. Efforts are being made to equal the indigo of the tropic islands with dyes won from chemical products. The $5,000,000 paid annually by the Empire for indigo tempt chemists to try hard to get a substitute. It is believed that the science that has had such success in recent years will win here. It is interesting to note that this entire aniline industry originated in England and France, that it is an adopted child in this Empire; but that care, analysis, and perseverance have put the productions of this people at the very head of the column. How important a business it has become is partly shown by the quantities exported. There were sent out:

Year.	Alizarin.	Aniline oils and salts	Aniline and tar.
	*Double cent.**	*Double cent.**	*Double cent.**
1880	58,800	.....	21,400
1890	79,000	38,300	72,800
1895	89,276	71,350	157,891

*1 double centner=220.46 pounds.

The distinguished position obtained and held to-day by the German Empire is due to the fact that every effort put forth and every step taken was made along the strictest scientific lines. In no land is scientific chemistry so earnestly and eagerly studied and cultivated as here. Enterprising manufacturers had the intelligence and farsightedness to see, the capacity to compete, and the skill to improve over all competitors. Hermsdorf, the greatest dyer of blacks in the world, worked out his problem successfully by putting chemists side by side, in laboratory and shop, with his practical dyers. Energy, intelligent efforts, scientific analysis—these are the secrets of his success, and these are locked away from no people. When one thinks of the Empire's wonderful success in these lines in the last thirty

years, one wants to urge his own people to employ the same means and to struggle for the same success. The quantity of dyes going into our country is enormous. The raw material out of which the most of them are made—tar and naphtha—are much more abundant with us than with these people. Surely, some effort might be made to make ourselves independent and to give to our own people such industries and such profits.

J. C. MONAGHAN,

CHEMNITZ, *July 21, 1896.* *Consul.*

BRITISH HIGHWAYS.

I have the honor to inclose herewith a copy of a note from Lord Salisbury of the 24th instant, transmitting, for the use of the bureau of highways of the State of California, extracts from a report prepared by the chief engineering inspector of the local government board, together with accompanying copies of different "highway acts" of the British Parliament.

I have also the honor to inclose a copy of my note to His Lordship in acknowledgment of these documents, stating that they will prove of much interest and value undoubtedly to the California bureau of highways, and I transmit them herewith, with the request that they may be forwarded to their destination at your convenience.*

In view of the general interest felt on this subject, I venture to suggest that it would appear very expedient if the report now transmitted could be printed for public information.

T. F. BAYARD,

LONDON, *March 30, 1896.* *Ambassador.*

LORD SALISBURY TO MR. BAYARD.

FOREIGN OFFICE, *March 24, 1896.*

YOUR EXCELLENCY: I have the honor to inform Your Excellency that the bureau of highways of the State of California have requested Her Majesty's office of works to acquaint them with the methods employed in this country in the matter of highway improvement.

I venture to ask that Your Excellency will be good enough to transmit to the bureau the inclosed extract from a report prepared some time ago by the chief engineering inspector of the local government board on the subject of the maintenance, etc., of highways in England and Wales, together with the accompanying copies of some of the highway acts, enumerated on the inclosed list, which the board trust may be found to contain information desired by the bureau.

I have, etc., SALISBURY.

EXTRACT FROM A REPORT PREPARED BY THE CHIEF ENGINEERING INSPECTOR OF THE LOCAL GOVERNMENT BOARD.

Our country roads have not been made with any particular kind of material or in any particular way, but have grown up just as the exigencies of trade or traffic demanded and according to no set rules or principles. They consequently present the greatest differences.

*Copy forwarded to California bureau of highways.

While some are as wide as the widest streets in towns, others are mere lanes where two carriages meeting can not pass each other.

In England, it can hardly be considered that there was any art or science in road making till the early part of the present century, and it is almost impossible to enter into any discussion of the technical points in connection with the formation and maintenance of roads without referring to the maxims and practice of the great pioneer in this branch of civil engineering, whose genius is not only universally acknowledged, but has even stamped itself on the European languages.

After a considerable experience of road making in Scotland and elsewhere, John Loudon McAdam appears to have settled some time before 1820 at Bristol, where he was made a magistrate of the county and appointed general surveyor of the roads in the district. When he took charge of these roads, it is admitted that they were more or less in a deplorable condition; but in a very short time after they passed under his charge they were transformed, as if by the wand of the magician, into such an efficient state that all classes bore the amplest testimony to his success, and especially that class who had the best opportunities of judging and whose interests were pecuniarily affected by the state of the roads—the great coach proprietors, before railways were introduced into the country. His experience, moreover, was not confined to any single county, but he was consulted by authorities in all parts of England; so that his knowledge of the subject, both in respect of its technical details and its actual practice, was such as no one else possessed.

His experience, too, was of that highest kind which is derived from the actual carrying out of works over a wide field of action. He constructed roads on plains and over hills, on hard ground and on soft, over rocks and across swamps, with granite, with whinstone, with flints, with limestone, with gravel, and with every kind of available material, and he appears to have carefully observed the results of his labors in each instance. These results were, moreover, obtained, not with an increased expenditure, but with an actual saving. His roads cost less both to form and to maintain.

Just as no work on roads is ever written without an explanation of McAdam's principles, so is it equally necessary in this paper to refer from time to time to those principles and to discuss them in connection with the more extended knowledge and better appliances of the present day.

WIDTH OF ROADS.

There is nothing like uniformity in the width of the county roads in the Kingdom, some of which are as wide as 80 feet, while others are only one-tenth of that width, *i. e.*, so narrow that even two carts can not pass each other on them. The average width, however, may approximately be taken at from about 15 to 30 feet for the metaled portions.

There is also no uniformity as to the footways. On some roads, there are no footpaths on the sides at all; on others, there is a footway on one side only, and on others, on both. Moreover, these paths, which are usually of gravel and raised from 6 to 12 inches (but in some places much more) above the metaled portions of the road and which generally slope toward the carriage ways, differ much in width.

In some places, also, there is a strip of greensward on the side of the carriage way, which is used by equestrians, sheep, and cattle.

These same observations apply also to all other roads in the country. There is no more uniformity to be found in them than in the county roads. They vary in width exceedingly, being in some places as wide as first-class county roads and in others dwindling down to exceedingly narrow lanes. These roads, too, have in some places footpaths and in others none.

With regard to the proper width that should be given to roads, it is manifest that this should depend on the object to be served by the particular road. Main roads, which are the principal means of communication between large centers of population, must not only be wider than mere country roads which run from village to village or are only required for the purposes of farmers, but must be wider near towns than at a distance from them.

McAdam thought that "roads near great towns ought not to be less than 30 or 40 feet wide, but at a distance from great towns it would be a waste of land to make them so wide."

No hard-and-fast rule can be made, unless it is that every road which is intended for carriage traffic should be sufficiently wide to admit of two carriages passing each other easily, otherwise the greatest inconvenience must be caused. The surveyor in designing new roads must be guided by his knowledge of the traffic of the district, and must regulate their widths accordingly. For country roads, the width should be somewhat more than twice the width of the vehicles and carts used in the particular country or locality, so as to allow the wheels to pass each other easily, and for ordinary main roads, twice this width would answer every reasonable purpose. If a road is made less than the width of two carts, it should widen out for a short length at regular distances apart to a little more than the width of two carts, so as to admit of carts passing each other at these refuges; but this is at best an imperfect arrangement, as the drivers do not see each other till they suddenly meet, when one must go back to the nearest refuge to let the other pass.

It should be borne in mind that the cost of maintaining a well-formed road is not in proportion to its width, but more in proportion to the traffic passing over it, so that, in laying down a new road, it is better to make it too wide than too narrow. Greater width affords greater convenience to traffic, and the road is not so often under repair. A narrower road, for the same amount of traffic, is oftener under repair and wears out both horses and carts much sooner. This is particularly the case where the road is formed with inferior material.

GRADIENTS.

Inasmuch as the roads everywhere have been constructed as they have been required in times past, and without the technical knowledge of the present day, the gradients usually were made to conform in great part to the character of the country over which they passed, and where obstacles, such as hills, were met with, the roads were generally carried over them without any ruling gradient having been adopted. Some, however, of the old roads with very steep gradients have been and are being gradually altered from time to time, but it would be very desirable to improve many others in the same way. Sir John MacNeil advocated a ruling gradient of not less than 1 in 40, Professor Mahan 1 in 33, and Telford about 1 in 30. If a ruling gradient of (*i. e.*, one not steeper than) about 1 in 30 could be generally adopted throughout the country, except for very short distances and in cases where the cost would be out of all proportion to the advantages gained, an immense benefit would be derived by the public.

The limit of the longitudinal gradient for macadamized roads as to steepness should not exceed about 1 in 20, and as to flatness about 1 in 100. A perfectly flat road is generally objectionable, in consequence of the difficulty of draining it properly; but the objection does not hold good if the road is raised above the surface of the country and its drainage can be effected properly.

Although the first cost of a road with a good gradient may be greater than that with a steeper one, the subsequent charge of maintenance is in favor of the former, as flat roads with the same amount of traffic do not wear nearly so much as steep ones.

CROSS SECTION.

The gradient from the middle of the road to the side is a technical point of the first importance, and, as usual, it was McAdam who really reasoned out the principle which should guide the surveyor. He said:

"A road should be as flat as possible with regard to allowing the water to run off at all, because a carriage ought to stand upright in traveling as much as possible. I have generally made roads 3 inches higher in the center than I have at the sides when they are 18 feet wide. If the road be well made, the water will run off very easily in such a slope.

"When a road is made flat, people will not follow the middle of it as they do when it is made extremely convex. Travelers generally follow the track in the middle, which is the

only place where the carriage can run upright, by which means three furrows are made by the horses and the wheels, and the water continually stands there, and I think more water actually stands upon a very convex road than on one which is reasonably flat."

The cross slope, therefore, recommended by McAdam, viz, 3 inches in a road 18 feet wide, would be 1 in 36. For a road 30 feet wide, McAdam also recommended a fall of only 3 inches from the center to the sides. This would be a gradient of only 1 in 60. There is no explanation of this apparent discrepancy in his practice; but he may have considered that a wider road might have a flatter cross section, because it has generally a smoother surface. Another engineer, John Walker, who lived in McAdam's time, advocated that the surface of the road "should be made with a very gentle curve in its cross section, just sufficient to permit the water to pass from the center toward the sides. The declivity may increase toward the sides and the general section form a very flat ellipsis, so that the side, at the time, should (upon a road of about 30 feet in width) be 9 inches below the surface in the middle."

Such a slope would practically be equivalent to 1 in 20 and would be much steeper than the best authorities in the present day recommend.

The slopes actually given to the roads in the country follow no rule. Some of them are almost flat, while others are very convex.

There is one serious disadvantage in giving the surface of the road an elliptical form, which is that the center portion has one slope, while the sides have another. This is most inconvenient to traffic and actually dangerous to carriages moving at a great pace. The sudden change from one slope to another is very apt to overturn the vehicle, particularly if there should happen to be any loose stones lying on the surface. It is somewhat illogical, moreover, to advocate such a form for a road, as, if the flatter portion of the surface has a sufficient slope, the remaining portion must have too steep a one; or, again, if the sides have a proper slope, the middle of the road must be too flat. Extreme steepness at the sides practically narrows a road for use, and also tends to the more rapid destruction of these portions of the highway.

The slope should be regulated with the following objects in view:

The rain falling should be able to escape readily to the sides, but not with such a velocity as to cause ruts on the surface.

The road should be as flat as possible, consistent with the first principle, so as to offer no inducement to vehicles to keep to any particular part of it, and thus to wear that part out.

FOUNDATION.

McAdam thought a foundation of large stones or other suitable material for the metaling to rest on was not only not necessary, but that it was positively injurious.

A thickness of 10 inches of metaling, well consolidated in layers of about 3 inches or so and placed on a dry subsoil (a sine qua non with him) was, in his opinion, sufficient to carry the heaviest traffic, even over soft ground. He never used large stones for a foundation in his practice of road making. He said:

"The roads can never be rendered perfectly secure until the following principles be fully understood, admitted, and acted upon, viz, that it is the native soil which really supports the weight of traffic; that while it is preserved in a dry state it will carry any weight without sinking, and that it does, in fact, carry the road and the carriages also; that this native soil must be previously made quite dry, and a covering impenetrable to rain must then be placed over it in that dry state; that the thickness of a road should only be regulated by the quantity of material necessary to form such impervious covering, and never by any reference to its own power of carrying weight.

"The erroneous opinion, so long acted upon and so tenaciously adhered to, that by placing a large quantity of stone under the roads a remedy will be found for the sinking into wet clay or other soft soil, or, in other words, that a road may be made sufficiently strong artificially to carry heavy carriages, though the subsoil be in a wet state, and by such means

avert the inconvenience of the natural soil receiving water from rain or other causes, has produced most of the defects of the roads of Great Britain.

"At one time I had formed the opinion that this practice was only a useless expense, but experience has convinced me that it is likewise positively injurious."

And the following evidence given by him before a parliamentary committee shows still more clearly what views he held on the subject:

"I should think that 10 inches of well-consolidated material is equal to carry anything.

"Q. That is, provided the substratum is sound?—A. No; I should not care whether the substratum was soft or hard; I should rather prefer a soft one to a hard one.

"Q. You don't mean you would prefer a bog?—A. If it was not such a bog as would not allow a man to walk over it, I should prefer it. * * * I think when a road is placed on a hard substratum, such as a rock, the road wears much sooner than when placed on a soft substratum.

"Q. But must not the draft of a carriage be much greater on a road which has a very soft foundation than over one which has a rocky foundation?—A. I think the difference would be very little, indeed, because the yield of a good road on a soft foundation is not perceptible."

McAdam thought that a road lasted much longer over a soft than over a hard substratum, and independent evidence was given before Parliament to prove this in respect of a road between Bristol and Bridgewater, part of which ran over a morass and part over a rocky foundation. It was contended by McAdam that the unyielding rock caused the road to wear away much faster. This seems, however, to be directly opposed to the experience of most engineers, whose practice it usually is to secure as hard and unyielding a foundation as possible.

McAdam's great objection to laying down a bottom of large stones was that such a foundation acts "as a sieve, which lets the water in which penetrates the whole mass, when the road is liable to give way in all changes of weather." Frosts and thaws were, in his opinion, the great evils to be guarded against, and no made foundation was equal to the natural soil in a dry state.

There is no doubt that little uniformity prevails in this country. It may safely be asserted that most of the old roads, if dug up, would be found to have little or no foundation, but many of those formed within, say, the last twenty or thirty years, would be found to rest on foundations of stones, or ballast, or some suitable material of the kind.

When a foundation is used, a thickness of from 6 to 12 inches is recommended, and over this from 4 to 6 inches of metal. But here, again, no hard-and-fast rule can be laid down. The surveyor must be guided by circumstances, by the nature of the ground, the kind of material at his disposal, the traffic, etc.

It is manifest that a greater thickness of foundation should be given to a road where the ground is soft and the traffic is of a heavy nature than where the ground is hard and the traffic light. A less thickness of good, tough metaling will suffice than of softer material, which is liable to break under pressure.

Where roads are made without foundations, McAdam's rule will probably be found as correct as any. He considered 10 inches of metaling sufficient for any road; but, in carrying this out in practice, it must never be forgotten that McAdam insisted on the soil underneath being perfectly dry, and the metaling, after being properly prepared, being thoroughly consolidated, so consolidated, in fact, as to prevent any water passing through it. It is this water getting under the surface and alternately freezing and thawing which destroys a road quicker than anything else.

DRAINAGE.

The draining of the ground over which the road is to run is manifestly of the first importance, because unless every precaution is taken to insure that the soil on which the road rests is kept dry under all conditions of weather, as insisted upon by McAdam, the road is certain, sooner or later, to be destroyed.

In setting out the lines for a road, the engineer should ascertain very carefully how the ground over which the road is to pass drains, so that he may be able to make the best use of the natural outfalls of the country, and thus get rid of the water from his road drains in the readiest way possible.

Walker particularly recommended that the side drains should be on "the field side of the fence, with apertures in the fence for the water to pass from the sides of the road into them;" but this is by no means a rule that has been generally adopted, nor is it always possible. The objection to it is the difficulty of getting at the drains at every point to keep them clear, nor can the men in charge of the roads so readily observe if a stoppage takes place and requires to be removed.

The drains are in some places within the fences and in others beyond; but wherever the drain may be placed, its width and depth must evidently be regulated according to local circumstances. In places where the drain, after running a short distance, can relieve itself by discharging the water into some natural ditch or stream, its dimensions may be small; but where there is no natural outlet for a long distance, the quantity of water which it will have to remove will be far greater, and its dimensions will consequently require to be adjusted to these circumstances. It is therefore clear that in some places a drain 18 inches square or even smaller would more than suffice for its object, while in others a drain 3 feet square or larger would fail to carry away the water flowing into it.

In some situations, moreover, the road might intercept the surface drainage of the country, and provision would have to be made for the water which would naturally flow into the drain from the adjacent lands, in addition to that from the road.

In adjusting the sizes of drains to roads, one important consideration should always be borne in mind, and that is, that the velocity of the water should not be so great as to wear away the sides and bottom of the drain. Sewers are made as small as possible to secure the greatest velocity and scouring power with a given quantity of water. The opposite principle must be borne in mind in designing drains for roads. The drain should rather be made too large than too small, and too wide and shallow than too deep and narrow, in order to reduce the velocity of the stream so that it shall not destroy the drain. Deep drains by the side of the road are very dangerous.

The level of the water in the drains should be kept well below the material forming the road. McAdam considered 3 or 4 inches sufficient, but others recommend as much as a foot at least, and more, even, if it can be easily obtained.

Where the road has a comparatively steep longitudinal gradient and the water must flow with considerable force, it may be necessary to go to the expense even of a covered drain constructed with slabs of stone or stoneware pipes or masonry.

It is manifest that in some places drains would not be required on both sides of the road. One may suffice, but in these cases the water falling on one-half of the road would require to be conveyed to the ditch on the other side by drains laid under the roadway.

Some surveyors recommend that cross drains should never run at right angles to the line of the road, but in a slanting direction. One advantage of this is that a better gradient can be secured for the drain.

The surveyor should take great care that the line chosen for the road does not run over any natural springs rising to the surface. Such springs should be avoided if possible; but, in cases where this is not practicable, special means must be adopted to lead off the water by drains laid under the road.

When there is a footpath by the side of the road, the water falling on that half of the road is conveyed to the ditch at regular distances apart by covered drains laid at a proper inclination under the path, and where the longitudinal gradient of the road is so steep that the water flowing along the side of the footpath is liable to cut up the surface, a proper paved or other suitable channel to resist the action of the water should be laid down.

Nothing so much conduces to the preservation of roads as good curbs and proper side channels for the removal of rain; but, unfortunately, curbs are seldom laid down except in

towns, and not nearly sufficient attention is paid to the construction of side channels, which are soon worn into ruts by the rain.

HEDGES AND FENCES.

Air and sunshine are as necessary for the preservation of roads in good order as for the vigorous health of plants and animals. Water and want of light are among the most destructive agents in nature, and no road can be kept in order which is always in a damp state and on which the sun never shines. Everything, therefore, that prevents a perfect perflation of air and obstructs the revivifying effects of sunshine is to be avoided.

Considered, then, from a purely engineering point of view, there is no doubt that a road would be all the better without hedges and fences of all kinds, but, inasmuch as a barrier of some kind or other between roads and the adjoining fields is absolutely necessary on other grounds—*e. g.*, to keep cattle from straying from one to the other, to mark the limits of property, etc.—a hedge may be considered a necessary evil, and the point, therefore, for the consideration of the engineer is how to minimize that evil.

Obviously, the higher and thicker the hedge, the more obstruction must it offer to the sun and wind. The object to be borne in mind should be to erect such a barrier as (1) shall allow the greatest amount of light and air to pass through it and (2) shall best answer the nonengineering purposes for which it is required.

According to these principles, the best barrier would be one of iron or of iron and wood combined, provided that it was sufficiently strong to resist being broken down by cattle, horses, etc. Iron wire should not be used, as it is easily bent out of shape, and cattle and horses are very apt to injure themselves in attempting to jump over the fence or to force themselves through it. Barbed wire is still more objectionable, and its use, which is cruelty to animals, should be strictly forbidden.

A strong iron fence forms, perhaps, the best barrier, but it is costly, and few authorities would be prepared to go to the expense of putting it up, especially as it deteriorates with time and entails a constant charge for maintenance, in consequence of the corrosion of the iron and the necessity for periodically painting it.

Wood is not a suitable material for a fence, as it is easily destroyed by willful persons and rots under the effects of the atmosphere; but, if used, it should be oak or some other kind which resists rot as long as possible. Most kinds of wood are perfectly useless for the purpose.

The commonest fence in England is the quickset hedge, and its almost universal use is perhaps due to the fact that it is cheap and requires no skilled labor to maintain; but it is a mistake to suppose that a good quickset hedge can be established without care in planting and constant subsequent watchfulness.

One of the first engineers who drew attention to the importance of the subject of hedges in connection with roads was John Walker, who, in his evidence before Parliament, said:

"The fences on each side form a very material and important subject with regard to the perfection of roads; they should in no instance be more than 5 feet in height above the center of the road, and all trees which stand within 20 yards from the center of it ought to be removed. I am sure that 20 per cent of the expenses of improving and repairing roads is incurred by the improper state of the fences and trees along the side of it, on the sunny side more particularly. This must be evident to any person who will notice the state of a road which is much shaded by high fences and trees, compared to the other parts of the road which are exposed to the sun and air. My observations with regard to fences and trees apply when the road is on the same level as the adjacent fields; but in many cases on the most frequented roads of England more stuff has been removed from time to time than was put on. The surface of the road is consequently sunk into a trough or channel from 3 to 6 feet below the surface of the fields on each side. Here all attempts at drainage or even common repairs seem to be quite out of the question, and by much the most judicious and economical mode will be to remove the whole road into the field which is on the sunny side of it."

Mr. Law, in his work on Roads, makes some very useful observations:

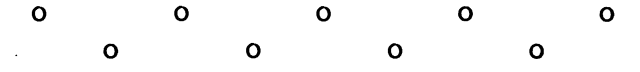
"Few persons are aware of the extent to which a road may be injured by high hedges or lines of trees. Trees are worse than hedges, because they not only deprive the road of the action of the sun and air, but they further injure it by the dripping of rain from their leaves, as a consequence of which the road is kept in a wet state long after it would otherwise have become dry.

"When fences are indispensable, they should be placed as far as may be from the sides of the road and should be kept as low as possible. When there is a deep ditch on either side of the road, it becomes necessary, to prevent accidents, that the fence should be placed between the road and the ditch; but in other situations, the fence should be placed on the field side of the ditch. In so doing, the surface draining of the road into the side ditches is less interfered with and the action of air and sunshine is less obstructed by the fence.

"The different descriptions of fence which may be employed are various. In districts where stone is plentiful, and especially in the immediate neighborhood of quarries where stone rubble can be obtained at a trifling cost, dry rubble walls, without any mortar, are very good and cheap, and require little or no repair.

"For the road itself, an open post-and-rail fence is the best which can be employed, because it scarcely impedes the action of the wind and sun upon the surface of the road; but the great practical objection to timber fences is their liability to decay, which occasions frequent and constant expense for renewal.

"The most common and, all things considered, the most useful fence is the quickset hedge. If properly planted and carefully attended to for the first few years, a natural fence may thus be obtained sufficiently strong to resist the efforts of cattle to break through and very economical in cost for maintenance. A bank or mound of earth, at least 2 feet in depth, should be prepared for the quicks, which should be three-year plants which have been transplanted two years. The best kind of soil is one of a light, sandy nature, admitting sufficient moisture to nourish the plants and retaining moisture in dry seasons. Heavy, clay soils are not sufficiently pervious to water, and plants placed in such soils are never found to thrive. A mixture of peat or of rotten leaves is of great use and causes the plants to grow with much vigor. The quicks are most commonly planted in a single row at distances of about 4 inches apart. But a much better hedge is formed by planting them 6 inches apart, in a double row, as shown below, with a space of 6 inches between the rows—



and so arranged that the plants in one row are opposite the spaces in the other. By this arrangement, although the plants are really not so crowded and have more space round their roots, from which to derive nourishment than in a single row, they form a thicker hedge. The proper time for planting quicks is during the autumn or the spring, and in fine seasons the operation may be continued during the whole winter. A temporary fence should be put up to protect the young plants from injury, and the fence should be retained until the hedge has attained sufficient strength to require its protection no longer at the end of a period, under favorable circumstances, of three or four years after the quicks are planted. That the plants may thrive, they must be very carefully attended to at first, and it is essential that they should be properly cleaned and weeded at least twice every year. Once every year, toward the end of summer, the hedge should be judiciously trimmed, not to such an extent as to produce stunted plants, but by merely cutting off the upper and more straggling shoots, so as to bring it to a level and even surface. By proceeding in this manner, a neat, strong, and compact hedge of healthy plants will be obtained in about three years after planting."

Trees, however much they may add to the picturesqueness of a road, add still more to the difficulty of keeping it in repair; and thick avenues, *i. e.*, trees planted close to each other

on both sides of a road, are quite incompatible with the due preservation of the surface. The evil is worse the narrower the road is, for then very little sunshine can get to the road at all; so that the macadam is constantly damp and wears away much more rapidly under traffic.

What are understood as boulevards are not so objectionable, because the roads are usually very wide and the trees are not planted so close as in an avenue; but, from an engineering point of view, everything that interferes with the sun and prevents the circulation of air is objectionable.

MACADAM.

It is to the use of broken stone for the formation of roads to which, more than to anything else, we owe the great improvement in the communications of the country. It is not quite clear who really discovered the virtues of hard stones broken into small, angular pieces, but John Loudon McAdam has probably a better claim to the title of the discovery than anyone else.

He it was, at all events, who explained the principles of the use of the macadam, the size to which stone should be broken, the manner in which it should be laid, etc., and thus it is that the kind of road he introduced has ever since borne his name, not only in England, but in many foreign countries.

McAdam attached the greatest importance to the size to which the stone should be broken. He said: "The size of stone used on a road must be in due proportion to the space occupied by a wheel of ordinary dimensions on a smooth, level surface. This point of contact will be found to be, longitudinally, about an inch, and every piece of stone put into a road which exceeds an inch in any of its dimensions is mischievous."

But he thought it a better plan to specify the size, not by its dimensions, but by its weight, and he fixed 6 ounces as the proper maximum weight of each piece. His reasoning was that, by experiment, he had found very little difference in the sizes of different kinds of stone broken to this weight, however much the stones might vary in specific gravity. He said: "I hold 6 ounces to be the maximum size. If you made the road of all 6-ounce stones, it would be a rough road; but it is impossible but that the greater part of the stones must be under that size."

Whether McAdam was right or wrong, the principle he laid down has not been adopted in the country. Nowhere is the size of macadam regulated by weight, but invariably by dimensions. It is probable that the inconvenience of having to weigh stones in a balance to be carried about by the surveyor, compared with the rapidity with which they can be measured by means of a gauge, has caused the former practice to be abandoned. Broken stone now, to be used for a road, is generally specified to be of a size so that it shall just pass in any direction through a gauge of certain dimensions.

Considerable importance, too, is attached to the manner in which macadam is prepared for use. Machine-broken stone is not considered of the same value as that broken by hand. The stones are not of so regular a size and shape, and there is a greater proportion of inferior stuff. A mechanical crusher is apt to stun the material and does not leave the edges so sharp for binding as they are when the stone is broken with a small hammer.

It is probable that the crusher, by its severe blows, affects the interior constitution of the stone and renders the fragments more liable to split under the roller.

McAdam, who never thought anything regarding road making beneath his notice, laid it down that stone should only be broken by people sitting on their haunches and striking it with a small hammer. This serves just to break the stone and no more. The edges are sharp, and the fragments, not having received too great a blow to affect the internal structure of the stone, remain thoroughly sound and are tough enough to resist the crushing power of the roller. It should be borne in mind, however, that in McAdam's time mechanical stone crushers were not in existence, nor even were road rollers in regular use, though they had been invented.

Taking all these points into consideration, it is probable that the best size for macadam for hard and tough stones, such as basalt, close-grained granite, syenite, gneiss, and the hardest of the primary crystallized rocks, is from 1¼ to 1¾ inches cube, according to their respective toughness and hardness, while stone of medium quality ought to be broken to gauge of from 1½ to 2¼ inches, and the softer kinds of stone might vary between the limits of 2 and 2½ or 2¾ inches; but the latter is a size which should seldom be specified.

As in everything else in connection with roads, no hard-and-fast line can be drawn; but the surveyor must prescribe the size to which macadam should be broken, according to his knowledge of the properties of the stone he proposes to use. Stones which bear even the same name are often as different in their properties as possible, as has been explained under the head of "materials."

The present writer is opposed to the use of large macadam. Where the surveyor has only a comparatively soft stone to form his roads with, the better plan, in his opinion, is to break the stone to 2 or 2¼ inches gauge, but, in putting it down in any quantity, to roll it at first with a light roller till the stones are fitted into their places and have become well consolidated. The passage of a heavy roller afterwards will not then be so apt to crush the material. Unfortunately, most surveyors are so enamored of heavy rollers that very few are aware of the advantages to be derived from the judicious use of light ones, which are seldom to be found in the country.

ROLLERS AND ROLLING.

The proper method of rolling macadam and the best weight for rollers are very important questions in the formation and repair of roads. It does not at all follow that the best weight for a roller for one county or country is the best for all. In a district where the only materials to be had are more or less of a soft nature, a much lighter roller is necessary than in one where the toughest basalts, granites, etc., are used. Heavy rollers would crush the soft materials to powder, and so destroy them for all practical purposes. Such rollers, moreover, are quite unsuitable for roads under which there are water and gas mains laid at an insufficient depth beneath the surface to resist the crushing power of a heavy load. The penalty to be paid for destroying a water or gas pipe is too serious to be lightly incurred, and, before deciding on the weight for his roller, the surveyor should be careful to ascertain the positions and sizes of all the pipes under the roads in his district, together with the depths below the surfaces at which the pipes have been laid, or he may do much mischief before he becomes aware of it.

The present writer is of opinion that the use of heavy rollers, which has been growing of late, is a mistake, and is only to be justified in towns where it is desirable to finish roads as soon as possible, so that there shall be the minimum of interruption to traffic. The heavier the roller, the more liable is the material to be crushed under the load, so that, unless the very best material is used, a 15-ton roller is very much too heavy for the object in view, most certainly for the general purposes of the surveyor in a country district.

When the materials used in a district are of different kinds—*i. e.*, where granites, syenites, basalts, etc., are used for the best roads and inferior stone for the minor ones—it is essential that there should be two rollers, one of a heavier and the other of a lighter kind, each to be used on the materials suited to it.

The present writer is of opinion that a road formed with a light roller, although it can not be made to consolidate so soon, lasts longer than one formed with a heavier roller. The consolidation in the latter case is effected more rapidly, no doubt, but at the sacrifice of much of the stone being broken or crushed into position. The lighter roller effects a truer binding of the macadam without breaking the stones into smaller fragments. Even when the best and toughest materials are used, it will be found advantageous to begin the rolling with a light roller and only finish with a heavier.

In rolling fresh material, the use of the light roller should be continued until it is observed that none of the stones advance from their positions, when the heavier roller should

be brought on to the work and its use continued until again it is found that no shifting of the macadam takes place.

MAKING A ROAD.

After the land over which the road is to run has been properly drained and fenced in, the surface of the ground should be leveled, or, rather, brought to the form of the curve of the road, and all soft and boggy soil rectified, either by its removal and replacement of sound, hard material or in some other way. Some surveyors recommend the use of faggots and brushwood, which, if used, should be laid down in fascines of bundles, one layer over the other and crosswise; but others consider the use of such a material for raising a road very objectionable unless the brushwood is always in water. It is alternately wet and dry, it rots, and its destruction soon follows, causing the road to sink.

The present writer is altogether opposed to the use of brushwood, excepting across a morass, where it may be considered to serve the same object as that of pontoons across a river, *i. e.*, to support the road and prevent its sinking through the bog.

Some surveyors recommend that the surface soil should be removed, while others prefer not to disturb it. Here, again, common sense must dictate the proper course to be pursued. If the surface soil is suitable for a foundation and superior to that on which it rests, it should be retained, but, if otherwise, it should be removed, so as to give the road the best foundation possible, *i. e.*, the dryest and firmest.

When all the soft and defective places have been excavated and refilled with good material and the entire surface has been brought to the proper curve, the road should be well rolled with a light roller, and material should be added in the soft places as these sink from time to time. The rolling should be continued until no more sinking takes place in any part of the road, when the light roller should be taken off and a heavy one substituted in its place, the soft places again being made good with good material as they sink. When all sinking has ceased, the surface soil may be considered fit to receive the foundation.

Where the soil is very soft, it will often be found impossible to use a roller at all, in which case the foundation must be put down before the rolling begins.

This foundation is formed in various ways and, of course, with such materials as can be obtained in the district. When stones of a rather large size are used, they should be, as recommended by Telford and so many of the surveyors, hand pitched with their broadest sides downwards, so as to insure them bedding properly, and the interstices should be filled with smaller stones. Then a layer of 2 or 3 inches of macadam should be put down and a thin sprinkling of some binding material should be thrown over the macadam. The road should then be well watered and rolled. When this has been thoroughly well consolidated, the second layer of macadam, about 3 inches thick, with some binding material if the stone is too clean, should be put down, and, when this has been well rolled and has become consolidated, carriages may be allowed to pass over the road.

The materials used for foundations are of very different kinds, many being quite unsuited for the purpose—large stones of almost any sort, furnace slag and clinkers, ballast, flints, chalk, broken pottery, tin cans, any material, indeed, that can be found ready to hand.

The use of soft material in a foundation should be avoided, if possible, as the effect of rolling the road will be to crush the material to powder, and this is the state to which such foundation must inevitably be reduced by the traffic in the course of time.

It is almost the universal practice now to sprinkle some binding material over the macadam before rolling it. This is usually gravel, or sand, or chalk, or chippings from quarries. It is a practice, however, which McAdam condemned with all the force of his character. His opinion was that any material like sand, or fine gravel, or chalk allowed rain to pass through to the bottom, whereas by rolling the macadam without the use of any binding material the mass became so consolidated as to offer an impenetrable barrier to the passage of the water.

The views expressed by Mr. Law, C. E., on this subject are worthy of much consideration.* He says:

"If the materials of which the covering is to be formed are in angular masses, no binding of any description is requisite, as they quickly become united by dovetailing, as it were, among each other much more firmly than they would by the use of any kind of artificial cement.

"When the stones, instead of being angular, are round and pebbly, like gravel stones, it is necessary to mix them with just sufficient matter of a binding nature as will serve to fill up the interstices between the stones, for otherwise these would roll about and would prevent the road from becoming solid.

"There are, then, two methods of cementing or solidifying the surface of a road—one, by the mechanical form of the materials themselves forming a species of bond; the other, by the use of some cementing or binding matter. And in comparing the relative merits of the two, the preference must certainly be given to the former—that in which the stones are united by virtue of their angular form, without the use of any cementing material. The principal reason for this preference is, that roads formed with stones so united are not materially affected by wet or frosty weather; whereas roads whose surfaces are composed of pebbly stones united by cementing material become loose and rotten under such circumstances, the cementing material becoming softened by the wet and reduced to a loose pulverulent condition by subsequent frost."

Mr. Law reasons on the subject exactly as McAdam did, whose views the present writer indorses.

Some surveyors are of opinion that, in laying down macadam, it should be sorted into two or three different kinds, with the view to the larger-sized material being placed at the bottom and the smaller at the top. This practice is not recommended by the present writer.

Where the surveyors have expressed any opinion on the subject, they seem to be nearly agreed that the bottom of the road should not be leveled, but formed to the curve of the surface of the road as it is to be when completed. When the natural ground on which the road rests is clay or other impervious soil, it is clear that to make the bottom of the road flat is to induce the water percolating through the macadam and foundation to rest in hollows below, whereas, if the bottom is curved, the water is more likely to flow off to the sides, and thus to leave the foundation and macadam dry. Moreover, as the wear of the road should be the same in all parts, the thickness of material should likewise be the same everywhere.

REPAIR OF ROADS.

As in the making and maintenance of roads it is essential that there should be abundance of water, without the use of which the surface can not be easily broken up nor the macadam be got to consolidate properly, the best season for doing work of this nature is that part of the year when water is plentiful and can be easily got and when the roads are softened with rain or moisture, *i. e.*, the late months of autumn or early winter.

It is not considered a good plan to coat a long length of road with material at once, because, if this is done, vehicles avoid going over the macadam, and thus prevent it from consolidating quickly. If short lengths only of the road are put under repair, the drivers find it more troublesome to be constantly avoiding them than to keep straight on their course, and thus the material is got to bind much sooner.

After April, and in the summer or dry months of the year, all loose stones should be removed from the road, for if allowed to stop, wheels passing over them loosen the material on which stones rest and thus cause much damage to the surface of the road.

The proper maintenance of a road consists in keeping the surface always smooth for traffic, and in taking care that the thickness of the macadam is not unduly diminished by wear. A road may be smooth on the surface, but, if the material is nearly worn away, it can not be

*The Art of Constructing Common Roads.

considered to have been properly maintained. To keep up a road in an efficient manner, unceasing vigilance is required. Ruts and hollows should be at once filled in with macadam, and all weak places as soon as observed treated similarly. A common fault is to put too great a thickness of stone down at once. Penfold says:

"It is one of the greatest mistakes in road making that can be committed to lay on thick coats of materials, and, when understood, in will no longer be resorted to. If there be substance enough already in the road, which, indeed, should always be carefully kept up, it will never be right to put on more than a stone's thickness at a time. A cubic yard, nicely prepared and broken, to a rod superficial will be quite enough for a coat and will be found to last as long as double the quantity put on unprepared and in thick layers. There is no grinding to pieces when so applied; the angles are preserved, and the material is out of sight and incorporated in a very little time. Each stone becomes fixed directly and keeps its place, thereby escaping the wear and fretting which occur in the other case."

For repairs of this nature, where, in fact, the mere surface of the road only is sought to be put in order, no binding material is used or necessary. The wheels of carriages gradually push the stones into their places and make them bind with the old material on the road. Some engineers are of opinion that no macadam should be laid down, however thin the coating may be, without the surface of the road being roughened with a pick. There is no doubt that this tends to make the new material bind with the old much sooner; but, on the other hand, it tends to disturb and to weaken the crust, if it should be very thin.

For more extensive repairs, *i. e.*, when a road has been allowed to become very thin and it is necessary that a considerable thickness of material should be laid on, the road must be what McAdam termed "lifted," or broken with a pick to the depth of 2 or 3 inches, and all large stones must be thrown aside to be broken to the required dimensions. A thin layer of new macadam must now be added and the road rolled. It will usually be found that no binding material will be necessary. When this layer has become consolidated, another, 2 or 3 inches thick, should be laid down and again rolled, and so on until the desired thickness of material for the road has been obtained.

McAdam objected to the use of any binding material, such as gravel, sand, chalk, etc., being used with the view to help the macadam to bind, but the almost universal practice now is to sprinkle some such material over the macadam before rolling it.

The present writer's views accord with those of McAdam. In his opinion, the bad state of many of the roads in the country and the constant repairs required to them are, in great part, the result of the use of binding materials, which, being invariably of a pervious nature, afford the rain innumerable passages through the macadam to the foundation underneath. Thus, not only is there water below the road, but the macadam and foundation are so thoroughly saturated with wet that no power on earth can possibly resist the loosening, disintegrating, and destroying effect of a few alternations of frosts and thaws.

No road should be lifted unless it has been softened with rain and there is plenty of water to finish the work of reformation. To lift and remake a road in dry, summer weather should not be attempted. The work should be deferred to the later months of the year, but not too late, lest frosts should set in. Some engineers consider October the best month in the year for lifting a road, so that the material may be sifted and sorted when dry and be consolidated in November and December.

It is, indeed, of great importance to avoid all extensive work on a road if there is any likelihood of frost, for the effect of a frost and then a subsequent thaw on macadam recently laid, after it has been well watered and has just become consolidated, but is still saturated with rain, is not only to loosen it, but also to disintegrate the material.

McAdam thought that a road which had a sufficient thickness of stone, but was out of order, should not be repaired with new material, but by picking up the old stone and reforming the road with it. He said:

"No addition of materials is to be brought upon a road, unless, in any part of it, it be found that there is not a quantity of clean stone equal to 10 inches in thickness.

"The stone already in the road is to be loosened and broken up, so as no piece shall exceed 6 ounces in weight.

"The road is then to be laid as flat as possible. A rise of 3 inches from the center to the side is sufficient for a road 30 feet wide.

"The stones, when loosened in the road, are to be gathered off, by means of a strong, heavy rake with teeth 2½ inches in length, to the side of the road, and there broken, and on no account are stones to be broken on the road.

"When the great stones have been removed and none left in the road exceeding 6 ounces, the road is to be put in shape and a rake employed to smooth the surface, which will, at the same time, bring to the surface the remaining stone and will allow the dirt to go down.

"When the road is so prepared, the stone that has been broken by the side of the road is then to be carefully spread on it; this is rather a nice operation, and the future quality of the road will greatly depend on the manner in which it is performed. The stone must not be laid on in shovelsful, but scattered over the surface, one shovel following another and spreading over a considerable space."

A little new macadam, however, mixed with the old will considerably improve the surface of the road. The old material lifted with the pick, even if broken afresh, never has the sharp edges of new macadam, and much of it is too rounded to bind in the same effective manner as freshly broken stone. Moreover, a great portion of the old macadam, when lifted, will be found to consist of material which has been reduced either to dust or to too small size to be fit for subsequent use. This material ought to be rejected, or, if used, it should only be employed for binding purposes.

STREET-CAR AND OMNIBUS LINES IN PARIS.

The following information concerning the regulations governing the rate of taxes, licenses, or other charges paid by the street-car and omnibus lines in Paris, also rates of passenger fare, etc., has been compiled from data furnished by the prefect of the Seine, viz:

The Compagnie Générale des Omnibus, running omnibus and street-car lines under concessions obtained from the municipality of Paris, pays taxes, called "droits de stationnement," for the privilege of occupying the public thoroughfares at the rate of 2,000 francs ($386) annually for each omnibus or street car.

Omnibus and street-car lines other than those of the Compagnie Générale des Omnibus, but also running under concessions obtained from the municipality of Paris, pay the following yearly rates for the occupation of the public thoroughfares, viz:

	Francs.	
Street cars running inside of Paris or from Paris to the suburbs, with head stations or starting points on the public streets	1,500	=$289.50
Omnibuses running to railway stations and having head stations or starting points on the public streets	1,000	= 193.00
Omnibuses running from Paris to the suburbs and vice versa, having head stations or starting points on the public streets	400	= 77.20
Omnibuses from the suburbs or others making periodical stops on the public streets	400	= 77.20

The above yearly rates are payable in periods of three months, in advance, for each omnibus or street car.

Street-car lines with franchises conceded directly by the French Government pay for the privilege of occupying the public thoroughfares 30 centimes (6 cents) for each trip of a street car from a starting point situated inside the city limits.

The street-car and omnibus lines also pay ground rent for the establishment of station offices on the public streets, the rates being fixed upon each particular case by the Paris municipal council.

RATES OF PASSENGER FARE.

The rates of passenger fare inside the city limits are 30 centimes (6 cents) for first class and 15 centimes (3 cents) for second class, irrespective of the distance traveled on the same line; the first-class fare once paid, gives also the right to a first-class ticket, called "correspondance," enabling the passenger to continue the trip on a corresponding or connecting line.

Beyond the city limits, the price of fare is variable and is calculated at about 10 centimes (2 cents) per kilometer (five-eights of a mile) for first class, and 7½ centimes (1½ cents) for second class.

Children under 4 years, carried on the laps of the persons accompanying them, free; also, small-sized packages which can be carried without incommoding other passengers and which do not weigh more than 10 kilograms (22 pounds).

Subaltern officers and soldiers in uniform have the right to first-class fare by paying the second-class rate.

SAMUEL E. MORSS,
Consul-General.

PARIS, *June 12, 1896.*

UNITED STATES TRADE WITH URUGUAY.

The ever-open question, how to increase our trade with Uruguay, as expressed in the numberless letters directed to this consulate requesting information of all kinds concerning various branches of business, indicates how little our people at home are posted on the subject, although nine-tenths of the questions asked in these letters have been answered time and again in CONSULAR REPORTS.

While it affords me pleasure to give information on subjects from which some benefit may come to somebody, it is discouraging to find that those efforts have borne so little fruit; otherwise, the same questions would not be asked over and over again.

For the information of all who have an interest in the trade between the United States and this country, I have compiled the annexed statement, showing the imports from and exports to the United States, by articles and values, during the calendar year 1895. This statement will serve to indicate the articles which might be largely exported from the United States to Uruguay, if proper steps were taken to extend our trade to these regions.

It will be necessary to exhibit in Montevideo the goods which we desire to introduce and sell, the same as our European competitors are doing, instead of expecting these people to go to the United States for them, or to ask for samples to be sent from here to the United States of what is wanted, etc.

Unless our people at home are ready to spend money in trying to get new trade here, they will hardly be able to get any. The people here are perfectly satisfied with their business relations with Europe and are certainly not going to the trouble and expense to experiment with goods from the United States unless our merchants who desire to sell to them place such goods before them here in the way of exhibits, sample agencies, etc., and prove to them the profit of making such changes.

EDGAR SCHRAMM,

MONTEVIDEO, *May 22, 1896.* *Consul.*

Articles imported into Montevideo from the United States during the calendar year 1895.

Articles.	Quantity.	Value.
Pine lumber.....feet...	1,714,707	$500,679
Kerosene oil.....liters...	8,581,181	395,774
Twine for harvesting machines.....kilograms...	263,762	84,404
Plows.....number...	7,247	66,925
Cotton-seed oil.....kilograms...	495,516	61,472
Leaf tobacco.....do.....	142,272	51,513
Cotton goods.....do.....	69,481	48,295
Cotton sail duck.....do.....	74,684	45,227
Resin and pitch.....do.....	2,159,707	43,215
Coal.....do.....	4,264,886	42,649
Pine pickets for fencing.....number...	951,907	38,025
Machines, mower and binder.....do.....	285	31,360
Drugs.....	.....	31,165
Lumber of hard woods.....feet...	50,470	29,937
Articles of hardware.....	.....	27,923
Turpentine.....liters...	147,981	20,374
Cotton cloth, drilling, etc.....kilograms...	33,741	20,245
Machines for husking and shellers.....number...	2,859	15,741
Lumber (cedar, oak, walnut, etc.).....feet...	14,258	12,629
Boxes, knocked down, in bulk.....do.....	37,566	11,270
Furniture.....	.....	10,570
Cord.....kilograms...	44,479	8,895
Plowshares.....dozen...	2,152	8,888
Hardware (farming implements).....	.....	8,110
Lard.....kilograms...	28,593	7,995
Sewing machines.....number...	506	7,258
Machine oil.....	.....	7,170
Threshing machines.....number...	3	5,740
Axes.....dozen...	686	5,568
Hay forks and forked spades, etc.....do.....	1,102	5,513
Cartridges.....number...	425,000	5,044
Tools (hardware, free of duty).....	.....	4,840
Plaster of paris.....kilograms...	320,441	4,813
Perfumeries.....	.....	4,303
Sheep dip.....kilograms...	13,230	3,969

Articles imported into Montevideo from the United States, etc.—Continued.

Articles.	Quantity.	Value.
Oysters and lobsters (canned goods)....kilograms...	12,608	$3,809
Fine hardware and haberdasher's goods....	....	3,757
Scales....kilograms...	59,316	3,678
Crystal and glass....	....	2,985
Clocks....number...	752	2,833
Revolvers.... do....	504	2,772
Cotton shirts....dozen...	790	2,763
Hardware (tools of all kinds)....	....	2,716
Wicks for lamps and candles....kilograms...	5,628	2,251
Carabines....number...	225	2,250
Wine....liters...	10,038	2,180
Tobacco, cut....kilograms...	1,757	2,107
Writing utensils (pens, pencils, etc.)....	....	2,081
Barrel staves....	....	2,000
Sulphur....kilograms...	9,670	1,934
Sirup....do....	9,341	1,868
Carriages....number...	18	1,853
Clay tubes....do....	3,180	1,726
Machines for irrigation (sprinkling)....do....	18	1,700
Writing paper....kilograms...	8,429	1,686
Wash lines and cordage....do....	2,245	1,676
Printed books, catalogues, etc....do....	4,425	1,592
Lumber (beams for masts, etc.)....number...	137	1,260
Machines of various kinds and different industries....	....	1,218
Cigars....kilograms...	267	1,201
Oakum....do....	9,378	1,138
Boxes, knocked down, in bulk....number...	4,522	1,057
Machines for sawing....do....	10	1,000
Balances....do....	103	974
Canned goods, various kinds....kilograms...	2,212	927
Varnish....do....	2,017	887
Starch....do....	7,892	868
Burlaps....do....	6,369	819
Flasks....	....	717
Paper packets....kilograms...	3,556	683
Cement....do....	39,125	642
Whisky....liters...	1,590	636
Wagon sheets of duck....kilograms...	1,020	609
Olive oil....do....	2,000	600
Baling presses....number...	2	600
Sheet iron, galvanized, for roofs....kilograms...	8,406	588
Shovels....dozen...	96	580
Paper for printing purposes....kilograms...	3,930	550
Paper for printing pamphlets and books....	....	533
Wheelbarrows....number...	120	492
Soda....kilograms...	12,195	488
Articles of pharmacy....	....	475
Pickaxes....kilograms...	1,505	452
Cooking stoves....do....	2,848	422
Brick-making machine....number...	1	400
Astronomical telescopes....do....	2	400
Gasoline....liters...	6,152	394
Machines (grain crushers)....number...	49	392
India-rubber and oilcloth goods....meters...	942	354
Cinnamon and sweetmeats....kilograms...	1,259	340
Spades....do....	1,642	329
Different articles....	....	328
Sulphate of iron....kilograms...	7,776	311
Bicycles....number...	12	310
Cotton cloth....meters...	2,316	282

Articles imported into Montevideo from the United States, etc.—Continued.

Articles.		Quantity.	Value.
Bitumen	dozen...	624	$280
Musical instruments			280
Paint	kilograms...	1,688	268
Shirts, wool	dozen...	31	248
Paper, packing and wrapping	kilograms...	1,537	246
Skins of polished patent leather	number...	39	234
Oars and poles			207
Brimstone and sulphur	kilograms...	2,500	200
Trucks	number...	10	200
Pianos	do.....	1	200
Brass wire	kilograms...	1,900	190
Tobacco in plugs	do.....	467	166
Wool cards	dozen...	13	162
Blacksmiths' drills	number...	4	160
Soap	kilograms...	1,650	148
Shoemakers' articles			146
Mats	meters...	796	143
Arms			135
Stoves of iron	kilograms...	620	124
Wheels for carriages			123
Tiles			120
Playing cards	gross...	14	112
Sawing machines	number...	2	110
Yarn	kilograms...	849	110
Canned corn	do.....	544	109
Kid leather	dozen...	8	100
Watches	number...	100	95
Scientific apparatus			91
Sugar	kilograms...	730	73
Oils of fine quality	do.....	1,650	66
Paper cartoons	do.....	216	63
Caps of metal for bottles	do.....	96	62
Agricultural machines	number...	2	60
Articles for the navy			60
Sewing thread	kilograms...	73	59
Boards for tables	feet...	97	58
Articles for belting			43
Iron wheels	number...	12	40
Piping of copper, bronze, iron, and lead	kilograms...	60	36
Pasteboard	do.....	100	35
Molasses	do.....	565	34
Codfish	do.....	210	31
Condensed milk	do.....	49	29
Barrel covers	do.....	55	27
Loose cotton for lining	do.....	190	27
Fresh oysters			22
Books, bound	kilograms...	35	21
Canned salmon	do.....	85	17
Bungs and corks	do.....	23	16
Tomato sauce and catsup	do.....	50	12
Carbonate of potassium	do.....	55	9
Chlorate of potassia	do.....	20	8
Hard-wood logs	pieces...	2	8
Cotton twine	kilograms...	10	7
Mineral water	dozen...	4	5
Labels for bottles and cartons	kilograms...	65	5
Potash	do.....	51	5
Total			1,759,700

Articles exported to the United States from Montevideo during the calendar year 1895.

Articles.	Quantity.	Value.
Hides.....pieces...	748,241	$2,569,754.48
Wool.....bales...	11,942	1,488,618.85
Horsehair.....do.....	376	78,482.51
Glue stock.....do.....	586	15,452.69
Linseed.....bags...	5,035	13,867.11
Bones.....kilograms...	809,755	11,388.47
Skins.....bales...	39	4,465.77
Ostrich feathers.....cases...	3	1,070.47
Horns and horn piths.....pieces...	50,867	1,063.86
Orange essence.....boxes...	5	520.83
Logwood extract.....do.....	20	36.02
Total.....	.....	4,184,721.06

RÉSUMÉ.

Imports from the United States	$1,759,700.00
Exports to the United States	4,184,721.06
Total trade	5,944,421.06
Excess of exports to the United States	2,425,021.06

BICYCLES IN URUGUAY.

Two years ago, there were probably one or two bicycles in this city, and quite a stir was caused when the owners passed through the streets on them.

In the year 1895, 103 in all were imported, as per statement shown below. Since January, 1896, the import of bicycles seems to have very much increased, judging from the many that are now in use and the number on exhibit in the establishments that are offering them for sale.

The table below gives the proportion that each country has contributed to the number imported in 1895, and it will be seen that the United States figure only with 12, which number includes bicycles brought here by naval officers, who sold them upon going back to the United States.

Country.	Number.	Value.	Country.	Number.	Value.
England	41	$1,379	United States	12	$310
France	6	190	Argentine Republic	5	120
Germany	29	1,265	Brazil	1	20
Belgium	4	135	Total	103	3,814
Italy	5	395			

The duties on bicycles and bicycle parts are 31½ per cent, 4 per cent, and 2½ per cent upon invoice valuation, no other definite valuation for duty purposes having yet been fixed for them, the result of which is that they are invoiced very low.

EDGAR SCHRAMM,

MONTEVIDEO, *May 25, 1896.* *Consul.*

PAPER TRADE OF URUGUAY.

For manufacturers and dealers in paper of various kinds throughout the United States, the following report will no doubt be of value, judging from the many inquiries received lately in regard to this branch of business.

The entire import of paper, including all kinds, of Uruguay, amounted to $303,772 (gold) in 1895, of which $2,482 was imported from the United States.

The following detailed statement gives the different kinds of paper imported, the valuation of each by the Government for import-duty purposes, together with the amount of duties that each kind has to pay on these governmental valuations. It further shows whence the paper is imported and gives amounts and qualities that each country has contributed to the above total.

Whence and kinds imported.	Quantity.	Value.
Writing paper (value, 35 cents per kilogram; duty, 31 per cent+5 per cent+2½ per cent=38½ per cent):	*Kilograms.*	
England	7,219	$2,844
France	6,811	2,681
Germany	51,529	12,046
Belgium	49,630	31,390
Spain	6,769	2,399
Italy	24,464	8,810
Argentine Republic	6,160	3,273
Total	125,582	63,443
Wrapping paper (value, 15 cents per kilogram; duty, 5 per cent+2½ per cent=7½ per cent; specific duty, 5 cents per kilogram):		
England	11,391	1,823
France	14,433	2,309
Germany	80,408	12,897
Belgium	38,947	6,231
Spain	10,457	1,673
Italy	360,122	57,620
United States	1,537	246
Argentine Republic	6,916	1,107
Total	524,211	83,905
Printing paper (value, 14 cents per kilogram; duty, 8 per cent+5 per cent+2½ per cent=15½ per cent):*		
England	170,445	23,862
France	43,534	6,095
Germany	544,577	75,571
Belgium	212,932	29,810
Italy	6,562	919
United States	3,930	550
Argentine Republic	49,703	7,074
Total	1,031,683	143,881

*All printing paper comes in packages of large sizes, mostly 87 by 54 centimeters (21 by 34 inches). As no modern cylinder presses are in use here, paper in rolls can not be used.

Imports of paper into Uruguay, etc.—Continued.

Whence and kinds imported.	Quantity.	Value.
Sandpaper (value, 20 cents per kilogram; duty, 31 per cent+5 per cent+2½ per cent=38½ per cent):	*Kilograms.*	
England	2,459	$491
France	184	37
Belgium	190	38
United States	8,429	1,685
Total	11,262	2,252
Wall paper (value, 36 cents per kilogram; duty, 31 per cent+5 per cent+2½ per cent=38½ per cent):		
England	1,401	472
France	7,738	2,786
Germany	3,185	978
Argentine Republic	267	140
Belgium	1,643	850
Total	14,234	4,956
Tin-foil paper:		
France	2,210	1,237
Germany	3,183	1,679
Belgium	300	168
Italy	290	163
Total	5,983	3,265
Blotting paper (value, 35 cents per kilogram; duty, 31 per cent+5 per cent+2½ per cent=38½ per cent):		
England	4,415	1,559
Germany	17	6
Belgium	34	12
Argentine Republic	145	51
Total	4,611	1,628
Silk paper (value, 16 cents per kilogram; duty, 5 per cent+2½ per cent=7½ per cent; specific duty, 5 cents per kilogram):		
Germany	1,260	441

Paper is sold, as is everything else to this country, on long terms, generally six months against notes.

There are various wholesale dealers in paper and a lot of smaller establishments in Montevideo dealing in this article.

The majority of the daily newspapers import directly, but a number of them buy their supplies from the wholesale dealers here. In all, there are eleven dailies and thirty-six other papers and periodicals edited and published in this city.

EDGAR SCHRAMM,

MONTEVIDEO, *June 8, 1896.* *Consul.*

No. 192——12.

SHOE TRADE OF URUGUAY.

Of late, quite a number of letters have reached this consulate from different parts of the United States, making inquiries about the shoe trade of Uruguay, with the object of supplying this market, providing the conditions proved favorable. Some of the letters contain a long list of questions which have no bearing on the trade here at all, while others fail to ask any questions except as to whether American-made shoes can be sold here to advantage.

Wishing to furnish all the information that can be given on the subject by a person not knowing the shoe-manufacturing business of the United States sufficiently to answer either in the affirmative or negative the various questions propounded, I have concluded to make a general report on the shoe business of this place and country.

I will commence by stating that Montevideo has a population of about 245,000 inhabitants; the entire Republic of Uruguay, about 750,000. The people draw very nearly all of their supplies from this city.

The entire importation of shoes and boots into Montevideo amounted to $9,453 in the year 1895, as follows:

Whence and kinds exported.	Quantity.	Value.
Felt shoes:	*Doz. pairs.*	
England	24	$50
France	176	370
Total	200	420
Men's shoes:		
England	64	1,584
Argentine Republic	6	57
Total	70	1,641
Boys' and girls' shoes:		
England	290	1,214
France	10	50
Germany	35	134
Belgium	333	1,318
Italy	24	84
Argentine Republic	91	364
Total	783	3,164
Men's and women's shoes:		
France	9	146
Germany	31	558
Belgium	110	1,924
Argentine Republic	24	432
Total	174	3,060
Slippers:		
England	8	44
France	227	838
Germany	47	280
Total	282	1,162
Wooden-sole shoes:		
Brazil	2	6

The duties on boots and shoes are 48 per cent, 5 per cent, and 2½ per cent; total, 55½ per cent, including all costs of entry, on the following valuations per dozen pairs:

Men's boots:	
Any quality, one or two soles	$40
Granaderos (Napoleon), long fines	50
Boys' boots (Napoleon), long fines	20
Men's botinas (high) of one or two soles	30
Ladies' boots of silk or mixed silk (high)	32
Men's shoes (buttons or low) in any style	20
Ladies' button shoes of cloth, any kind, not silk or mixed, single sole and heel	10
Ladies' botinas, high, of leather (not silk), one or two soles, any style	15
Children's leather (not silk or mixed), single sole, with or without heel, with elastics or buttons, up to No. 26	4
Same in silk or mixed silk, up to No. 26	22
Same for misses, up to No. 32	24
Same in leather, elastics or buttons, up to No. 26	9
Same in leather for misses, elastics or buttons, up to No. 32	12
Same in leather for boys, elastics or buttons, up to No. 32	15
Ladies' button or low shoes of silk or mixed	18
Misses' button or low shoes of silk or mixed	13

It will be seen that the above valuations are not only moderate, but may be considered low, inasmuch as no distinctions are made in the qualities of the shoes, outside of the above enumerated; for this reason, the duty of 55½ per cent could not reasonably debar the importation of the better and finer classes of shoes if otherwise the trade with this country from the United States in this article should prove to be practicable.

Very nearly all the common and medium shoes are made here at prices sufficiently low, adding the duties on shoes, to keep out the foreign article. These shoes are of very good material and well made from home quebracho-tanned leather, and cost from $1 to $2 per pair for both men's and women's shoes, according to quality of work and material used.

The finer qualities of shoes, both for men and women, are mostly made of foreign-tanned leather, the calf and kid coming principally from France and Germany. The patent leather, which is used to a very great extent for both men's and women's shoes, is altogether imported from Worms, Germany, said to be the best made in the world, which will stand both hot weather without scaling or sticking and cold weather without breaking. Shoes of these fine qualities of leather cost from $4 to $7 for men and from $3 to about $7.50 per pair for women. There are also some shops which make fancy shoes (silk and satin, for balls, etc.), but some of the fancy classes of shoes are imported.

Very nearly all the women's fine shoes are wanted with leather-covered wooden heels, the height of which varies (mostly very high). Women's fine shoes without this heel would hardly be salable here. The shape of shoes generally preferred is the pointed in both men's and women's. The women, as a general rule, have small and narrow feet; therefore, A, B, and C lasts

would be the most suitable to the trade here. High insteps are to be recommended for this trade. Thin and welted soles are preferred for women's fine shoes; tips are used, but not preferred; buttons are generally in use, also elastics, and both combined; lacing, very little; other systems are not known yet. A great many low-quarter shoes and walking slippers of fancy styles are also used by women. What is said about women's shoes will also answer for misses' and children's. The principal features of the shoe import trade from the United States to Montevideo would depend greatly on the tasteful get-up of the various styles, some to the detriment of the utility thereof. Prices would naturally have to compete favorably with European and homemade of same qualities of material and make.

The terms of sale, not alone in shoes, but upon very nearly all goods sold in this market, are six months against notes. These notes, in most instances, can be discounted if indorsed by seller and parties are considered safe by banks. In case of nonpayment of such notes, the business can be immediately closed by holders of the same.

A last word about samples. These can be brought in free of duty if they are rendered useless by punching a hole through the middle of the sole; otherwise, they have to pay the regular import duty.

EDGAR SCHRAMM,

MONTEVIDEO, *June 4, 1896.* *Consul.*

SAFES IN URUGUAY.

American safes are so far hardly known in Uruguay, and, with the exception of a very few which came here long years ago in a roundabout way, this great branch of American industry is like a closed safe itself in this country. The reasons for the exclusion of safes may be found in the following facts:

The United States not having any treaty with this country, no notice is taken of certain specialties solely pertaining to American industries.

The duty on iron safes is on the bruto (net) weight of same; for this reason, American safes have to pay for the filling, which is not iron, the same as if it were that amount of solid metal. This, of course, makes the American safes entirely too high in price compared with the ones imported from England and Germany, which are nothing but three-sixteenths to three-eighths inch iron boxes, and neither fire nor burglar proof, but cheap, on account of light weight, and perfectly answering the purposes, since none better so far have found their way to the public here.

The duties on iron safes are the following, the kilogram (2.2046 pounds) net weight being valued by the Government for import-duty purposes at 20 cents; of this, a duty of 31 per cent, 5 per cent, and 2½ per cent has to be paid; in all, 38½ per cent per kilogram, or about 3¾ to 3⅞ cents per pound for net weight of safe.

It is to be remarked that the fire record of Montevideo is about zero, on account of the almost fireproof construction of its houses; for this reason, fireproof safes are not as much needed as with us. The same is true in regard to burglary; I do not know of a single case of burglary during the last three years. For these reasons, the safes in use here seem to answer the purposes, although, in the true sense, not "safes" at all.

The business in safes is not different from any other; it is conducted on long terms—six months and over. It is not a business of itself, and many business houses have these iron boxes for sale.

The only practical way to introduce American safes here, if they can stand the duty, is to send one or two as samples, charges prepaid, and run the risk of future sales.

EDGAR SCHRAMM,

MONTEVIDEO, *June 1, 1896.* *Consul.*

PROPOSED INSPECTION OF ITALIAN FRUITS.

I inclose herewith an editorial from the New York Fruit Trade Journal of June 20, 1896, from which it will be seen that my frequent dispatches to the Department relative to the practices in the Sicilian fruit trade are by no means highly colored. The condition, so far as American interests are concerned, is deplorable in the extreme, and, in my opinion, the only protection lies, as I have often suggested, in the presence of inspectors. In the accompanying report, I have tried to lay the matter squarely before the banking interests, who, in the present crisis, are the heaviest losers, and respectfully request that, if the Department approves, it be given to the press at once.

The new season opens in October, and I trust some steps may be taken before that time to prevent a repetition of the disasters of the last twelve months. It is useless to appeal to the importers, for, in the spirit of competition, they lose their heads as well as their money; it is therefore to the bankers who issue the credits that the subject must be brought home.

CHAS. M. CAUGHY,

MESSINA, *July 18, 1896.* *Consul.*

[From the Fruit Trade Journal, New York, June 20, 1896.]

Not since the business of importing lemons was first introduced has the condition of this branch of the fruit trade been so demoralized as now. Something can and must be done to remedy the existing dangerous elements, hence the following questions are submitted for consideration:

How can we change the present demoralized condition of the lemon market?

If experience counts for anything, why do importers continue to support a trade the very foundation of which is unreliability and insecurity?

If it is difficult to prohibit the system of advancing money on this fruit in a general way or entirely, why are not other means devised and put into practice whereby the extent of this abuse may be moderated?

How is it possible for so enormous a branch of commerce as the fruit trade to allow the continuation of such illegitimate and false trading? Can no means be created by which this pernicious and abusive system of "advances" can be overcome?

Some two years ago, there appeared in the columns of this Journal an article from the pen of a highly regarded importer, Mr. Pettinato, in which he advocated a system of inspection on foreign fruits which, to our minds, would have brought about an ultimate and favorable result. Importing would have been made secure to a great extent and rascality prosecuted and punished. Has anything been done in this regard?

Do the importers or the bankers who have been cheated, robbed, and possibly ruined by rascals and dishonest shippers see their way clear for discontinuing this extremely hazardous method of transacting business, except they are forced to financial embarrassment and consequent ruin?

Are not the old practices and the fresh or almost daily instances where shipments of rotten or worthless goods are shipped against 4s. and 5s. per box advance sufficient and substantial proof that a radical change against so contemptible a method is imperative? (Nearly $20,000 lost by one importing house in the last three weeks through a swindle of the above character.)

Governmental inspection is needed to-day more than ever. Why, then, do not importers and bankers get together and determine upon a plan for placing a system of this kind in full force?

What are they waiting for? Delay is dangerous. Robbery and rascality will continue on in its deadly work until some inspection system is created.

Even in cases of purchased goods or fruits shipped without advances the inspection plan will prove beneficial, in that it will prevent the poor, undersize, or immature fruit from being shipped to this market.

Inspection will also greatly reduce the quantity imported. It will keep the poorest grade of fruit or trash from a possibility of being exported. It will more nearly centralize importations in our American markets. It will prevent the consummation of fraud and deceit. In other words, it will give life and vigor to the fruit trade and stimulate purchases abroad, which now are rare and difficult, owing to the unreliability surrounding the venture.

To those tradesmen who, through personal spite or individual ignorance, do not realize or appreciate the great value of an inspection system before goods are shipped, we say: "There are none so blind as those who will not see."

All that is wanted is the acceptance of this principle by importers and bankers. Details of how this system can be operated is a matter of minor consideration. All is possible where there is a will.

The fruit buyers of New York, Philadelphia, Boston, and Baltimore have formed unions to protect their trade from fraud, and from what we learn they have succeeded in preventing many abuses on the wharves arising from improper displays of samples or dishonest manipulations of boxes of fruit.

The fruit importers of New York have also formed a union, the object of which, we understand, is to protect themselves against imposition, abuse, etc. The only advantage their members have thus far enjoyed has been the privilege of receiving cable news from abroad and other information.

There is also in New York an Italian Chamber of Commerce, said to be formed to foster trade relations between Italy and this country. If this institution believes that business relations may be fostered and maintained by allowing the present abuses in the Sicilian fruit trade in its present relations with the United States to continue, then we believe the honored directors are grossly mistaken.

We think the time is fully ripe for the Fruit Importers' Union, the Fruit Buyers' Union, and the Italian Chamber of Commerce to join hands and, by a united effort, effect a plan which will result in destroying the present evil and discouraging the rascality so prevalent for years in the Sicilian fruit-exporting business.

We hope for a united movement of the three named organizations. There is intellect, energy, and diplomacy in their membership, and they can, if they will, bring this inspection system to a practical and successful issue.

REPORT OF CONSUL CAUGHY.

The Sicilian fruit season of 1895–96, now drawing to a close, will leave behind it a record that will have no rival in the history of the industry. Over 2,500,000 boxes exported, with an average loss of $1 per box, tells a story of disaster that is unique. The cause of this deplorable condition is readily explained.

An indiscriminate distribution of letters of credit among people who were irresponsible resulted in fruit of the commonest quality and naturally in exorbitant quantities being shipped, and, consequently, a heavy loss—but not to the shipper. There can be no better proof that this statement is correct than the fact that, while over $2,000,000 have been lost by the importers and bankers of the United States since October last, there has not been one failure in Messina. Those merchants who have capital have been practically driven out of the business by the impecunious, who live upon advances and who have everything to gain and nothing to lose. Provided with a letter of credit, their only aim is to get the advance it calls for, and their consciences are sufficiently elastic to allow them to buy the cheapest fruit they can find. I make the statement boldly, and I feel sure the American consignees, after their dearly bought experience of this season, will bear me out, that on more than two-thirds of the fruit shipped recently the shipper made a handsome profit upon the advance alone, a great deal of it, especially upon the steamers *Algeria* and *Victoria*, arriving in such bad condition that it was abandoned in New York, the Government losing the duty and the steamship agents the freight. The commonest kind of fruit was bought here for 2 lire (38.6 cents) a box and shipped upon an advance of 4s. (96 cents), and frequently 5s. ($1.20). Of course, the consignee was a loser, and he knows as well as I do that he will never collect what is due him, for the reason that the shipper, when he gets any money, immediately puts it in some relative's name or else disports it on his shirt front in the shape of diamonds. When he is ready to make another shipment, he will send some other person to invoice it; and a greater portion of the consul's time is occupied in unmasking such frauds.

The honest shippers of Sicily will hail with delight any movement that will tend to purify the present unsavory conditions that exist in this great industry. Ever since the advance system began its reign, those with capital, realizing that honest methods could no longer prevail, practically withdrew from the field and saved their money, for, in such a conflict as would have been waged, the capital of honest men must have been sacrificed, since their property would be liable for the losses, whereas the average fruit shipper of to-day has nothing tangible but his debts.

The remedy for the existing evils rests in the hands of the bankers and consignees, and that is, the sending of a corps of inspectors from America for the three ports of Messina, Palermo, and Catania, and having the letters of credit state that the documents are not negotiable unless the bill of lading bears the inspector's certificate of grade. The expenses should be paid by the shippers at 1 or 2 cents per box. No honest shipper will object to this, and those who do will be the very ones whose fruit is not wanted.

With such a system in force, the old-time, reputable firms who have been driven to the wall by dishonest competition will come to the front; only the better qualities will be shipped to America, and the common or "scarto" will be relegated to the essence and juice manufactories, where it rightfully belongs.

CHAS. M. CAUGHY,

MESSINA, *July 18, 1896.* *Consul.*

MANUFACTURE OF PORTLAND CEMENT IN BELGIUM.

The most important center for the manufacture of natural and artificial portland cement in Belgium is the calcareous district of Tournai, in the consular district of Brussels. Some of the quarries in this district date back several centuries, when they were principally worked for building stone and for the manufacture of hydraulic lime. The calcareous stone of these quarries, which originated the now extensive and important industry of cement manufacture, extends for many miles in length in apparently inexhaustible quantity.

Ordinary lime, best hydraulic lime, slow-setting cement (portland), and quick-setting cement (roman) are especial products of these immense quarries.

NATURAL PORTLAND CEMENT.

Natural portland cement is obtained from calcareous stone, which is carefully analyzed and dosed, calcinated in coke-heated kilns, and, after burning, finely pulverized.

Analysis of the calcareous stone found at Tournai shows the following result:

	Per cent.
Silicic acid	15.75
Oxide of iron	1
Alumina	3.95
Lime	43.1
Magnesia	0.49
Sulphuric acid	0.5
Loss in firing	35.21

Before burning, the stone presents a fine, close grain and is of a peculiar pasty appearance. Prior to calcination, the stone is carefully analyzed, to ascertain the exact quantity of lime, as well as other chemical properties, it may contain. The stone loses about one-third of its weight during the

process of burning, which also changes it to a brown tinge. When withdrawn from the kiln, the cement is put under sheds to thoroughly cool before being ground. After grinding and before being barreled, it is put into pits and left undisturbed for two months.

Natural portland cement was first manufactured in Belgium in 1882. The following are the principal works now engaged in this enterprise: Compagnie Général des Ciments Portland de l'Escaut, Dumon & Co., and Goblet, Delward & Co., Tournai; Société Anonyme de Chercg, Chercg; L'Union Fraternelle, La Franco-Belge, and Dutoit & Tell frères, Calonne; Lemain & Fleury, Lampe & Co., and Société Anonyme du Cancan, Antoing; V^ve^ Alex. Dapsens and Duquesne & Co., Vaulx; Laurent Delvigne & fils, Gaurany; the United Ghent-Antwerp Portland Cement Works, Ghent. With few exceptions, these establishments have formed a syndicate, under the name of "Mutualite Commerciale des Ciments Belges," with headquarters at Tournai. The society sells about 1,200,000 barrels of cement annually. The syndicate has adopted as a trade-mark the figure of a hammer. Any firm, however, of the syndicate having a trade-mark is privileged to use it. For instance, those firms having the well-known "rhinoceros," "trowel," "sword," etc., use them in conjunction with the syndicate trade-mark. Independently of the trade-marks of the manufacturers, important buyers of the Mutualite who have labels enjoying a certain reputation are permitted to affix them on the barrels. It is stated that the principal object of this arrangement by the Belgian manufacturers is to warn and protect purchasers against persons who purchase roman cement for export without mark or label and unknown and unauthorized by the manufacturers have portland-cement labels affixed to the barrels at port of shipment. The Mutualite has sent circulars to interested parties in the United States informing them of the measures adopted to prevent this fraud. Hereafter, all barrels containing cement manufactured, shipped, or sold by this syndicate will be fire marked as follows: First quality, inside and outside of barrel, "Portland Warranted, M. C. B.;" second quality, inside only, "Deuxième quality;" third quality, inside only, "Ciment Romain."

ROMAN CEMENT.

Roman cement is also manufactured in the Tournai district. It is much cheaper than portland cement, the selling price being about 50 per cent less than the portland. It is much employed in Belgium, replacing, advantageously, a good hydraulic lime. Manufacturers, however, will not guaranty it, as it is made of refuse stone, not suitable for the manufacture of portland cement. It has a natural light-yellow color. Cinders are very often added, changing it to a grayish color resembling portland cement, and also increasing its resistance in a slight degree. This is the product which is purchased by unscrupulous exporters and sold by them marked as portland cement. This fact is significant and should attract the attention of builders, to avoid disasters such as the unexpected collapse of buildings, where first-class cement has been supposed to have been employed.

ARTIFICIAL PORTLAND CEMENT.

Artificial portland cement was first manufactured in 1872 by Messrs. Duffossez & Henry, at Cronfestu, Belgium. There are now several important works in Belgium engaged in its manufacture. Among the most extensive and well-known Belgian manufacturers are Messrs. Dumon & Co., Tournai; Duffossez & Henry, Cronfestu; Société Anonyme de Niel on Ruppel and North's Portland Cement Works, Beersse. I am indebted to these firms for much valuable information regarding this important article of trade.

Artificial portland cement is the result of burning a thorough admixture of clay and carbonate of lime in constant proportions, and, when dry, reducing to finest powder. Several cements are manufactured by burning natural argillaceous limestone containing varying proportions of clay and carbonate of lime. Some manufacturers rectify the composition of these cements after burning by adding, as required, limestone, slag, etc. Cements are thus produced resembling in chemical constitution portland cement, but which do not possess its properties, on account of the constituent elements not having been forced into combination by calcination and semifusion of the mass. These cements are sold under the name of artificial portland cements, though in reality they are really mixed cements, comprised of limestone or slag, possessing none of the qualities or properties belonging to real portland cement.

Artificial portland cement, having an invariable chemical composition, must necessarily present a constant character and behavior, and the small differences shown by the assays arise generally from more or less perfection in the burning and grinding, whereas other cements not only vary, by reason of the degree of burning and grinding, but also exhibit radical changes in their physical and chemical constitution, on account of the varying proportions of their component parts. Cement may be submitted to a large number of tests for the purpose of ascertaining its qualities. These tests relate to: (1) Regularity of composition; (2) fineness of grain; (3) gravimetric weight; (4) specific gravity; (5) time of setting; (6) resistance to tensile, compressive, or shearing strains and cohesive strength, either when pure or mixed with sand; (7) uniformity of volume or expansion; (8) resistance to frictional wear; (9) expansion; (10) impermeability, etc.

To be considered of good quality, the cement must give a satisfactory result to the group of tests to which it is submitted. Thus, if properly proportioned, it should, for a given fineness of grain, have a maximum of weight and specific gravity, fulfill the required conditions of setting, and show the minimum of resistance to strain required within a given time, etc.

TESTS OF PORTLAND CEMENT.

I am indebted to the manager of North's Portland Cement Company, at Beersse, Belgium, for the following valuable information relative to tests which in practice are thought to be sufficient for an artificial portland cement of good quality.

(1) *Regularity of composition.*—As the chemical assay is rarely practical and not a sufficiently accurate test of the regularity of the composition of the cements, it is preferable to examine the residue, and, for this purpose, a few samples of cement should be passed through sieves of 5,806 and 31,612 meshes, respectively, per square inch. The residue remaining on the sieves will at once give an idea of the regularity of the composition of the cement. The grains should be uniformly of a bluish color, hard and sharp, and no foreign matter should be found mixed with the residue. The presence of sand would indicate either adulteration or careless manufacture; black particles would reveal the presence of ash or unburnt fuel; a certain quantity of yellow grains arising from the presence of unburnt matter would denote careless picking; and a large quantity of white grains would reveal an excess of sulphate of lime or of uncombined lime. In first-class portland cement, the total quantity of foreign matter should not exceed 1 per cent by weight.

(2) *Fineness of grinding.*—To determine the fineness of grinding, it is usual to ascertain the percentage of residue left on sieves of 5,806 and 31,612 meshes per square inch, respectively, after ten minutes' shaking. Specifications have generally tolerated a maximum of 15 per cent on a sieve of 5,806 meshes. A good portland cement should not contain more than 8 or 10 per cent of residue on a sieve of 5,806 meshes, generally known as the 6,000 sieve. On the other hand, the residue on a 31,612-mesh sieve should be equal to about four or five times that left on a 5,806-mesh sieve.

(3) *Gravimetric weight.*—Gravimetric weight means the weight of a liter (1.0567 quarts) of cement at its minimum of settlement. For an ordinary fineness of grain, a high gravimetric weight generally denotes a cement rich in lime and well burnt. Both of these properties are essentially characteristic of cements of great strength. It is easy to obtain the gravimetric weight of cement by means of an inclined plane of zinc, upon which the cement should be scattered slowly by spoonfuls, until the measure is full. A good portland cement of a fineness from 8 to 10 per cent of residue upon a 5,806-mesh sieve should give a minimum gravimetric weight of 115 pounds per strike bushel.

(4) *Specific gravity.*—The determination of the specific gravity or density is the most important test to ascertain the true character of any cement. Certain cements may resemble artificial portland cement in fineness of grinding, in gravimetric weight, and in the time and manner of setting; but what no addition of limestone or slag or any other adulteration can give them is the high density of artificial portland cement, which varies between 3.05 and 3.18. The specific weight of a cement can be determined by using a measuring glass of a quarter of a liter in capacity, graduated in cubic centimeters, into which is poured turpentine up to the level of the one-hundredth division; 100 grams of cement should then be dropped into the liquid by small quantities until the liquid rises to another level. Dividing 1,000 by the difference between these two levels, the specific gravity is obtained.

(5) *Time of setting.*—The time of setting of any cement is ascertained in the following manner: Make a paste of 500 grams of cement and a quantity of water, which, for artificial portland cement, should be from 24 to 28 per cent of the weight of the cement. The required quantity of water varies according to different cements, and should be such that, after working it up with a trowel for five minutes, the resulting paste should be sufficiently hard to hold together when dropped from a height of about 18 inches and coherent enough for this fall to produce no fissure or crack in the paste. A ring of 8 centimeters diameter and 4 centimeters thickness, placed on a glass plate, should then be filled with the above paste and the upper surface smoothed over without compressing the paste. The setting begins when a Vicat needle, of 1 square millimeter of section, bearing a load of 300 grams can not penetrate by its own weight as far as the glass plate. The setting is ended when the needle fails to make a perceptible mark on the cement. A good slow-setting artificial portland cement should not begin to set before twenty minutes, and the time of setting should not exceed twelve hours. A good quick-setting artificial portland cement should begin to set before five minutes and should set hard within the hour. This latter requires a greater quantity of water and should be mixed up in one or two minutes. In making this test, the following conditions should be observed: (1) Maintain the temperature of the cement, water, and surrounding atmosphere between 13° and 18° C. during the whole test; (2) mix the cement on some nonabsorbing surface—marble, iron, or glass—so as to avoid any loss of water; (3) oil slightly the glass plate, as well as the interior of the ring, before the operation, so as to prevent too strong an adherence of the cement.

(6) *Uniformity of volume or expansion.*—True artificial portland cement does not vary in volume, that is to say, it does not swell. Like all other bodies, it dilates with heat, but this dilatation is imperceptible, especially when the cement is mixed with sand; but many other cements which contain an excess of free lime expand in setting, crack, and frequently bring about the complete destruction of the work. The following is an excellent test to ascertain if the cement has the fault of swelling. After preparing a paste, in the manner described for the setting test, make it up into slabs of 30 to 40 square centimeters of surface and 1 to 2 centimeters thick. These slabs should be allowed to harden during twenty-four hours and afterwards placed in cold water, which should gradually be brought to boiling point. Another way is to make a ball of the cement paste and place it immediately on a red-hot plate over a spirit lamp. In both the above tests, the slab and the ball should preserve their form and be free from fissure and cracks. The other tests mentioned can only be properly performed in a laboratory, on account of the special apparatus and great care required.

STRENGTH TESTS OF CEMENT.

Natural portland cement.—Cement manufactured by the Compagnie Général des Ciments Portland de l'Escaut, Tournai. Composition: Water, 0.48 per cent; silica, 22.17 per cent; alumina, 4.6 per cent; oxide of iron,

1.23 per cent; lime, 60.86 per cent; carbonic acid, 1.46 per cent; magnesia, 0.73 per cent; sundries, 5.15 per cent; loss, 2.82 per cent.

Test made at Malines (tensile strength per square centimeter): Pure cement—7 days, 38 kilograms (83.6 pounds); 28 days, 44 kilograms (97.64 pounds); two-thirds sand and one-third cement (28 days), 24.9 kilograms (53.78 pounds); three-fourths sand and one-fourth cement (28 days), 16.8 kilograms (36.96 pounds).

Test made at the ministry of public works, Paris (tensile strength per square centimeter): Pure cement—7 days, 27.58 kilograms (60.676 pounds); 28 days, 35 kilograms (77.161 pounds).

Test made in the laboratory of J. Gordon & Co., London (tensile strength per square inch): Seven days, 406 to 448 pounds (average per square centimeter, 31.5 kilograms=69.444 pounds); 14 days, 405 to 540 pounds—average 472 pounds (average per square centimeter, 35.19 kilograms=77.58 pounds); 28 days, 530 to 630 pounds—average 571 pounds (average per square centimeter, 40.1 kilograms=88.184 pounds).

Test made in the laboratory of W. W. Maclay, New York (tensile strength per square inch): Seven days, 438 to 487 pounds—average 463 pounds (average per square centimeter, 32.62 kilograms=71.914 pounds).

Artificial portland cement.—Cement manufactured by Duffossez & Henry, at Cronfestu, Belgium. Composition: Water, 0.2 per cent; organic matter, 0.7 per cent; soluble silica, 21.2 per cent; insoluble silica, 1.6 per cent; oxide of iron, 1.27 per cent; oxide of alumina, 7.79 per cent; lime, 64.5 per cent; magnesia, 0.59 per cent; sulphuric acid, 0.6 per cent; carbonic acid, 1.36 per cent; loss, 0.19 per cent; total, 100 per cent.

Tests made in the laboratory of the War Department, Liege (tensile strength per square centimeter, average of ten samples): Briquettes of neat cement gauged with 25 per cent of water, after one day in air and six days in water, 41 kilograms (583.43 pounds per inch); briquettes of neat cement gauged with 25 per cent of water, after one day in air and twenty-seven days in water, 68 kilograms (967.64 pounds per inch); briquettes composed of three parts of sand and one part cement, guaged with 10 per cent of water, after one day in air and six days in water, 22 kilograms (313.06 pounds per inch); briquettes composed of three parts of sand and one part cement, guaged with 10 per cent of water, after one day in air and twenty-seven days in water, 39 kilograms (554.97 pounds per inch); fineness, residue on sieve of 900 meshes per square centimeter, 3⅓ per cent; weight of a hectoliter filled in three-fourths of an hour, 130 kilograms (286 pounds); setting—initial, 35 minutes; hard, 3½ hours.

American test of artificial portland cement: Laboratory of Fairbanks & Co., New York City—tensile strength, neat cement (7 days), 552 pounds; laboratory of Dr. Henry Froehling, Richmond, Va.—tensile strength, neat cement (7 days), 581 pounds; time of setting—initial set, 4 hours and 5 minutes; end of setting, 11 hours and 20 minutes; fineness (100-mesh sieve), 15 per cent.

Artificial portland cement manufactured by the North's Portland Cement Works, at Beersse. Chemical composition: Silicic acid, 22.125 per cent; alumina, 7.07 per cent; peroxide of iron, 2.364 per cent; oxide of magnesia, trace; lime, 66.577 per cent; magnesia, 0.753 per cent; potash, 0.65 per cent; soda, 0.186 per cent; sulphuric acid, 0.057 per cent; total, 99.782 per cent.

Tests made in laboratory of W. W. Maclay, New York (tensile strength per square inch): Neat cement test (gauged with 24 per cent of water)—7 days, 500 pounds; 28 days, 680 pounds; sand test (one part cement and two parts sand, 12½ per cent water)—7 days, 226 pounds; 28 days, 310 pounds; sand test, one part cement and three parts sand, 8 per cent water)—7 days, 99 pounds; 28 days, 171 pounds; fineness—passing No. 80 sieve (5,800 holes), 96 per cent; passing No. 50 sieve (2,500 holes), 99 per cent. The neat cement gauged with 24 per cent of water bears the 1-pound wire $0\frac{1}{4}$ inch diameter in 2 hours and 40 minutes.

Artificial cements.—Cements manufactured by the Society of Niel on Ruppel. Composition: Silex, 22.1 per cent; alumina, 8 per cent; oxide of iron, 3.2 per cent; lime, 63.7 per cent; magnesia, 0.63 per cent; carbonic acid, 0.68 per cent; loss in firing, 1.5 per cent; not dosed, 0.19 per cent; total, 100 per cent. Resistance: pure cement—7 days, 35.68 kilograms (512.28 pounds); 27 days, 44.32 kilograms (631.12 pounds); three parts sand and one part cement (27 days), 21.48 kilograms (305.95 pounds).

Cement manufactured by Duffossez & Henry. Composition: Soluble silex, 21.2 per cent; insoluble silex, 1.6 per cent; oxide of iron, 1.27 per cent; alumina, 7.39 per cent; lime, 64.5 per cent; magnesia, 0.59 per cent; carbonic acid, 1.36 per cent; sulphuric acid, 0.6 per cent; loss, 1.89 per cent; total, 100 per cent. Resistance: Pure cement—7 days, 30.5 kilograms (426.92 pounds); 27 days, 38.5 kilograms (540.74 pounds); three parts sand and one part cement (27 days), 17.27 kilograms (241 pounds).

Natural cements.—Cement manufactured by the Compagnie Général des Ciments Portland de l'Escaut, Tournai. Composition: Silex, 22.17 per cent; oxide of iron, 1.23 per cent; alumina, 4.6 per cent; lime, 60.86 per cent; magnesia, 0.73 per cent; carbonic acid, 1.46 per cent; various losses, 8.95 per cent; total, 100 per cent. Resistance: Pure cement—7 days, 38 kilograms (540.74 pounds); 27 days, 44.4 kilograms (626.12 pounds); three parts sand and one part cement, (27 days), 24.9 kilograms (341.52 pounds).

Cement manufactured by Dumon & Co., Tournai. Composition: Insoluble silex, 4 per cent; soluble silex, 24 per cent; oxide of iron, 2 per cent; alumina, 3 per cent; lime, 62 per cent; magnesia, 0.6 per cent; sulphuric acid, 1.2 per cent; carbonic acid, 1.2 per cent; various losses, 2 per cent; total, 100 per cent. Resistance: Pure cement—7 days, 42.7 kilograms (597.66 pounds); 27 days, 52.4 kilograms (739.96 pounds); three parts sand and one part cement (27 days), 17.3 kilograms (261.91 pounds).

Exports of cement from Belgium to the United States, as declared at the several consulates.

Year.	Exported from—				Total.
	Brussels.	Charleroi.	Antwerp.	Ghent.	
1890	$85,921.07	$291,676.80	$212,450.51	.....	$490,048.38
1891	129,308.74	39,053.09	243,792.46	.....	512,154.29
1892	272,665.07	181,947.18	154,970.94	$4,267.58	613,850.77
1893	360,970.67	141,565.58	216,195.19	11,354.68	730,087.12
1894	330,443.06	65,104.37	196,317.46	23,030.86	614,895.75
1895	552,306.53	40,791.86	167,279.04	46,322 63	806,700.06
Total	1,731,615.14	760,139.88	1,191,005.60	84,975.75	3,767,736.37

The total declared value of cement exported from Belgium to the United States during the six fiscal years from 1890 to 1895, inclusive, amounted to $3,767,736.37, of which $2,491,755.02 was from the consular district of Brussels.

GEO. W. ROOSEVELT,

BRUSSELS, *January 22, 1896.* *Consul.*

MANUFACTURE OF FIREARMS IN BELGIUM.

The Fabrique Nationale d'Armes de Guerre, at Herstal, near this city, has recently exported several invoices of military arms to the United States, and, in order to reply to inquiries made at this consulate relative to the factory and the weapon there produced, I have prepared the following report.

Perhaps in no sections of the world, with the exception of those where natural resources have stimulated particular industries, is to be found a locality so entirely devoted to the production of any one article of manufacture as exists in Liege and its outlying districts.

Liege, from its early history, has been the arms center of the world, and within a small radius about the city is a population of over 80,000 persons who obtain the means of subsistence by producing at their homes or in small shops firearms and component parts thereof.

Until the year 1890, this large collection of workers accomplished their end in independent groups, making different parts of arms with an astonishing amount of dexterity and cheapness, considering the primitive tools at their command. In the year 1890, the Fabrique Nationale was incorporated with a view of employing the skill of these workmen on a broader and completely modern basis. The company, encouraged by an order from the Belgian Government for 150,000 stand of magazine military rifles, known as the Belgian model of 1889, 7.65 millimeters caliber, with the aid of competent engineers and the well-known enterprise of the Belgians, constructed a plant for the manufacture of small arms by machinery, which has increased in importance and is now considered one of the largest and probably the most modern and perfect arms-manufacturing establishment in the world. The

machinery in use and the methods of construction could be profitably imitated by all engaged in this line of business.

The works are situated 3 miles from Liege and half a mile from the River Meuse and cover nearly 20 acres of ground. The building is but one story high. This mode of construction gives better light to the workmen, and machinery and materials can be more easily moved to different parts of the shop than in a building of several stories, as is usually the case in the United States. The roof of the factory is of iron, with plate-glass windows, and is formed in a series of inverted Vs. In this way a direct north light is obtained on all the machines of the main shop, which has an uninterrupted floor space of 105,000 square feet. In many parts of the United States sufficient land at a moderate cost can be obtained, and it would be desirable for those intending to erect similar works there to investigate this mode of construction. The works are divided into two distinct departments, viz, the arms shop proper and the cartridge factory. Both are supplied with power from one central plant. Electric power only is used, which is placed in a separate building and contains three compound Corliss condensing engines, developing 500, 400, and 300 horsepower, respectively, each connected with their respective dynamos. From the dynamos, the current is transmitted to different sections of the factory, driving electromotors for the several purposes required. Each electromotor is attached by belting to a line of shafting. This system, which has been in use for four years at Herstal, has proved to be very economical. In this way, complete independence of each line of shafting is obtained, and, when necessary to work overtime in certain departments, one, two, or all of the three generating dynamos can be used, as the switchboard is so arranged that the current generated by one of the dynamos can be transmitted to any one motor or any collection of motors. This method of transmitting power is in great favor in Belgium, and has been adopted in several of the large factories. The great glass works of the Val St. Lambert Company employ this system.

In the arms factory, the dynamos generate current enough to drive thirty motors, supplying also a complete electric lighting of both incandescent and arc lamps. Thirty per cent of the machinery and tools in this factory was furnished by Messrs. Pratt & Whitney, of Hartford, Conn., and gave such satisfaction that during the past year 750,000 francs ($144,750) have been paid to Messrs. Pratt & Whitney and Messrs. Brown & Sharp for supplies of this kind.

The capacity of the factory was originally 250 repeating rifles and bayonets and 25,000 cartridges per day. At present, 650 finished guns and bayonets and 300,000 cartridges can be turned out daily.

From 2,800 to 3,000 hands are employed, about half being women. Wages are based on a given production of each separate operation; each workman is paid extra for any quantity of work done in excess. The maximum limit of extra pay is fixed at 40 per cent above the basis. In the machine shops, the basis for men ranges from 5 to 7 francs (96.5 cents to $1.35)

a day; in the other shops, men receive from 3.50 to 6 francs (67.5 cents to $1.15) a day. Women start in on a basis of 1.75 to 2.50 francs (34 to 48 cents) and are allowed the same extra rate as the men. All hands make from 25 to 40 per cent above the fixed wages.

The ages of men are from 18 to 50 years. The women are from 18 to 40 years old.

Ten hours constitute a day's work. During the working hours, the employees are allowed ten minutes at 8 a. m. and ten minutes at 4 p. m. to eat. For the midday meal, the company supplies a large hall and heating apparatus for the women. About 1,000 avail themselves of this privilege. Three messes are run by the company—one for the clerks and foremen, one for the comptrollers to the military commissioners of reception, and one for the officers and guests of the company. The expense of these messes is largely borne by the company.

The morale of the people employed is high. The women are strong and healthy. On some kinds of machines, they work more quickly than men and take better care of the tools and machines under their control.

A medical staff and pharmacy are attached to the works, where all employees are treated by the company's physicians and furnished medicines without charge. Those ill at their homes receive the same benefits from the company, and, in case of injury while at work, are paid full wages, with medical attendance gratis.

The Spanish-model rifle made at these works has been sold to the governments of Spain, Brazil, Chile, Uruguay, Venezuela, Guatemala, Mexico, and Colombia. These rifles are 7 millimeters caliber. The initial velocity of the projectile, which weighs 11.2 grams, is 700 meters per second. A military commission of the Brazilian Government is now inspecting 50,000 stand of these rifles and 25,000,000 cartridges. All parts of the gun are absolutely interchangeable.

The Fabrique Nationale has recently contracted to deliver to the Norwegian Government the Krag-Jorgensen gun, the same as has been adopted by the United States Government, and, if called upon by the United States Government, could furnish 400 to 600 of these rifles per day, at about $15 apiece, with bayonet. I am informed that this represents about $10 less than the cost price in the United States. The price of the Belgian and Spanish models is about the same. Belgium being a neutral country, with no antagonistic interests to our own, it would seem that, in case of necessity, to arm troops quickly in the United States, advantage could be taken of the large facilities of the Fabrique Nationale d'Armes de Guerre, at Herstal.

HENRY W. GILBERT,

LIEGE, *May 2, 1896.* *Consul.**

*Three drawings transmitted by Consul Gilbert—(1) ground plan of factory, (2) Spanish model rifle, (3) complete magazine rifle with bayonet—are filed in the Bureau of Statistics, Department of State.

INDUSTRIAL AND ART EXHIBITION AT NUREMBERG.

This is, indeed, a season of exhibitions in Europe. In fact, it is almost impossible to visit any city of importance in central Europe during the present summer without finding there some sort of an exhibition, or "Ausstellung" as the Germans call it.

Berlin, Budapest, Dresden, Kiel, Stuttgart, Wiesbaden, Munich, and Geneva are all now busy scenes of exhibitions of one kind or another. Those at Berlin and Budapest are perhaps the largest and most entertaining, that is, if the outside so-called "tingle-tangle" amusements and attractions are to be classed as a part of the exhibitions. But if these outside attractions are not to be counted, then undoubtedly the Nuremberg exhibition stands by all odds at the head.

This exhibition, called the "Bayerische Landes-Industrie-Gewerbe und Kunst Ausstellung," or Bavarian Industrial and Art Exhibition, was formally opened May 15 last by Luitpold, the reigning prince of Bavaria, and will close October 15 next. It was gotten up by the Gewerbe Museum, a permanent industrial exhibition of the city of Nuremberg, with a view of extending the trade of Bavaria by exhibiting to the public the various industries of the Kingdom and showing the development and improvement in the same during the last fourteen years, or since the last Ausstellung, which was held in that city in the year 1882.

The cost to the permanent society in opening this exhibition was about 1,500,000 marks ($357,000), and this amount was spent wholly in erecting the buildings and beautifying the grounds, not one cent being spent for outside attractions of a character foreign to the exhibition. Therefore, whatever success the Nuremberg Ausstellung may attain will be due entirely to an honest exhibition of the products of the Kingdom, rather than to the side amusements and attractions which are so often taken advantage of to catch the people.

The exhibition occupies the grounds of the city park, and, in point of artistic arrangement and general beauty, is said to surpass all others now being held on the Continent. The park itself is a marvel of beauty, and the air is rendered delightfully fragrant by the perfume from thousands of most beautiful and delicate roses.

The buildings are very artistically made of white stucco on a framework of wood and steel, and their general outward appearance affords one an excellent idea of the German ability to decorate. From the buildings, pleasant walks lead everywhere through shrubbery and among flower beds to quiet nooks, where one can sit during the afternoon and enjoy the music and breathe the fragrant atmosphere.

Most of the exhibits are in an immense building constructed in the form of a semicircle, in the center of which is a very large fountain that sends forth in the evening four large streams of different colored water, built on

the same plan as the fountains at the Chicago Exposition, though perhaps on a somewhat smaller scale. From this fountain, the main or large promenades lead out through the grounds.

The building before which this fountain plays is the Industry Building. This is the largest building of the exhibition and is divided into eight parts to correspond to the number of provinces in the Kingdom, each province having a separate part for all its industrial exhibits. This plan is not a bad one, as it enables a person to ascertain just what is manufactured in each province, without compelling him to walk through the entire building.

The building containing the exhibits of the Government schools for technical instruction is also exceedingly interesting. The plans, designs, and all the other different kinds of drawings and moldings here exhibited attest the lively interest which the State takes in this sort of education.

Next to the Industry Building in size, is Machinery Hall, a large part of which is taken up by the Government railway exhibit. Here one has a good opportunity to study the advancement made in railroading where the Government is the owner and where, consequently, there is no chance for sharp competition such as America has in this line.

The beginning of railroading in Germany dates back to 1835, when the first road was built and opened between Nuremberg and Fürth, a smaller city lying about 8 kilometers (4.97 miles) to the northwest. While the progress has been steady and substantial, that perfection of beauty, comfort. and speed has not been attained here which characterizes railroading in the United States.

The electrical display is most excellent. All day long throughout the large hall may be heard the busy hum of machinery—printing presses, sewing machines, and all kinds of motors imaginable by which electricity is made available for mechanical purposes. Here is the exhibit of Messrs. Schuckert & Co., who are said to have the largest electrical plant in the world. From their exhibits the whole park is beautifully lighted and the magnificent dome and tower of the main building brilliantly illuminated. Wires connect the exhibition with Munich, and in the evening, for the payment of a few cents, one may listen to Wagner's operas, as rendered on the Munich stage.

The Art Building is a very neat and symmetrically put together little structure containing works by Nuremberg masters, but chiefly paintings from the Munich galleries.

The last building to mention is that occupied by the Military Museum. So far as the building goes, it is quite creditable, but one can not say so much for the exhibit. It is but fair to presume that a country like Bavaria, which is so justly proud of its fine military service, would make this exhibit one of the finest and most interesting of the exhibition. But such does not seem to be the case. The military display is not at all in keeping with the other exhibits and far below what one might expect to see. In fact, it is more or less a failure. It is reported that the Prince Regent, while inspecting the military exhibit on the day of opening, laughingly intimated that it

would be a good idea to close this building at once. Upon reflection, however, it occurs to me that there may be an explanation for this failure—a good sign growing out of it. May it not be that under the influence of this nineteenth-century civilization, men are thinking less about destruction and more about development; that the busy hum of machinery has for them more charms than the roaring of cannon and the clashing of swords.

Last, but, however, not least, is the exhibit of the beer-brewing industry. It is, of course, well known that Bavaria is particularly celebrated for excellent beer, and the Nuremberg exhibition certainly affords one a good opportunity to try the different kinds and brewings. All the latest and most improved apparatus and machinery used in brewing the beer and in cleaning and filling the casks are displayed for public examination and inspection, and, indeed, the exhibit is highly interesting and creditable; but to the great mass of people the most attractive part by all odds seems to be the sample place where the beer itself is sold at 20 pfennigs, or about 5 cents, a half liter. This sample place is a very large garden, with a seating capacity for many thousand persons, and is surrounded by what is termed the "Bier Halle," a sort of a circular-shaped colonnade building erected at the expense and by the efforts of the exhibiting brewers, and in this garden and "Halle" may be had the various kinds of foaming beer fresh from the keg. In the center of this garden is a large music stand, and every afternoon and evening, hundreds, if not thousands, of people—men, women, and children—collect here and listen to the music and drink the beer. The garden restaurant and the open-air concert are the especial delight of the German people. They will sit for hours, with their families, around tables in the open air, smoking, drinking beer, eating bread and cheese or sausage, and listening to the music. In fact, in the afternoon and evening, one will find the German dwelling or home, as a rule, deserted. Whatever success the Nuremberg exhibition as a whole may attain, one thing is certain, and that is, that the brewers never intended their exhibits should cost them any money, and judging from the daily crowded condition of the "Bier Halle," their fears, if they ever had any, are already put at rest.

The price of admission to the grounds and buildings is 1 mark (23.8 cents) for every person, whether adult or child, except on Wednesdays, when it is just half that amount. After 6 o'clock, however, the price of admission is reduced to 30 pfennigs (about 7 cents), except on Tuesday and Friday evenings, when it is 50 pfennigs (12 cents). There is also a season ticket costing 20 marks ($4.76) which admits the bearer at any time in the day and as often as desired.

So far, the weather has been favorable to a large daily attendance, and the financial success of the enterprise is no longer a matter of doubt, but already fully assured.

HENRY C. CARPENTER,

FÜRTH, *August 8, 1896.* *Commercial Agent.*

AMERICANS UNDERSELLING THE GERMANS IN BARBED WIRE.

According to a recent report published in the Cologne Gazette, a representative in Hamburg of a large Westphalian iron works, whose special branch is the manufacture of barbed wire, states that the condition of the export trade in barbed wire, especially to Japan, is at present very unsatisfactory, owing to the American competition. He goes on to say that with an American price of £9 12s. 6d. ($46.29), that of Belgium at 230 francs ($44.39) free on board Antwerp, and that of Germany at 217.5 marks ($51.76) free on board Hamburg, per ton of 1,000 kilograms, it is no wonder that the Germans are unable to effect any sales.

According to this report, the Hamburg export houses are forced to buy American wire, because their foreign customers have already begun to buy it directly from the United States. The German houses being thus obliged either to lose their business or to import American wire themselves, have decided to do the latter, and this all the more as, in consequence of the direct importation of barbed wire, they would also lose the sale of other goods which would likewise be purchased directly from the United States, experience having shown that a business connection, when once established in one article, also extends to others. The only thing that has remained of the former extensive business in barbed wire is the prospect of selling the article retail in 50 rolls. A few orders of this kind have come in.

Should the ratio of the German and American prices change, a sacrifice would be necessary on the part of the Germans in order to get rid of the American competition. This is also the case with wire nails, which Americans are exporting to Japan via Hamburg at prices with which the German industry can not compete.

WM. D. WAMER,

COLOGNE, *August 7, 1896.* *Consul.*

CANADIAN FURNITURE IN IRELAND.

For the benefit of those who may be interested, the attention of the Department is called to the fact that a representative of a large furniture-manufacturing firm at Woodstock, Ontario, has been recently in Belfast soliciting orders from the trade for all classes of furniture. It is estimated that during the week he was here his orders aggregated $5,000, and while in Dublin they aggregated $10,000. Chairs and desks appeared to be the lines which he pushed most vigorously. I was shown a catalogue issued by this concern called a "chair book," which contained one hundred and sixty-five pages, exclusively devoted to chairs of every description; also, a price list, a key to the former, of twenty-five pages. The catalogue was a

most elaborate and attractive book, full of illustrations and executed in the best style of the printer's art. The same firm has in preparation an elaborate catalogue of bedroom suites, extension tables, chiffoniers, hall racks, sideboards, roller or shutter desks, etc. Its representative was prepared to furnish everything in the furniture line of which the frame is made, either in whole or in part, by machinery.

I understand that there are several other large firms in the same locality whose representatives are "on the road" in all parts of the Kingdom, soliciting orders for all classes of furniture. In fact, they are applying the German idea of sending agents abroad to solicit trade who have absolutely a thorough knowledge, technical and otherwise, of all the details of the business which they represent. They ascertain the style and class of furniture most in use, that which is most popular and sells best; they agree to duplicate English designs and makes at much lower figures than the home manufacturer; they take orders for any quantity and in any pattern from three suites up, agreeing to deliver the goods carriage paid. As may be supposed, this vigorous personal application is meeting with much success.

These enterprising firms are having great success in another line of orders, viz, supplying duplicate designs "in the white," or unfinished condition. That is, the goods are made ready for putting together, and when they arrive on this side they are fitted up, upholstered, and completed ready for the market. This method means packing in smaller bulk, thus saving considerable in handling, transportation, etc.

I learn also that these firms have a very large export trade in certain lines of woods "in the white," which stain well and make excellent imitations of chippendale mahogany and other expensive woods so popular in this country. They are finished up for customers in various styles, as required.

Up to the years 1892 and 1893, many large American manufacturers had almost a monopoly of the export trade in machine-made furniture. Their agents would periodically visit the trade on this side and sell from designs, with stocks or samples of same at London, Liverpool, or Glasgow. This new departure, however, of competitors, unless followed up by American manufacturers with their wonted intelligence and vigor, is likely to divert a very large share, if not all, of the trade to Canada, which was formerly monopolized by American firms.

In this connection, it is not too much to say that the Canadians are not only making vigorous efforts to divert export trade from other countries to their own, but are quite successful; not only in many branches of manufactured goods, but also in the products of the farm. In fact, evidence is not wanting that the vast resources of Canada are being utilized more generally and successfully in the industrial arts, trade, and commerce with the United Kingdom than at any period of her history. Each succeeding year finds her people elbowing their way more extensively into the foreign trade and successfully competing with the exporters of other countries, and in lines, too, which formerly were entire strangers to them.

If the American manufacturer desires either to retain or increase his present export trade with this country, he should understand that it will be necessary to give it the most careful attention in directions that are comparatively new to him, and I mean by that that his representatives must be prepared to meet the representatives of manufacturers of other countries whose efforts to enlarge their trade are buttressed by the most careful, painstaking, and intelligent methods, which are the outcome of long experience and careful study of their customers' needs and idiosyncrasies.

In the absence of import duties upon many lines of manufactured merchandise and many products of the soil, and in view of the large population and high standard of living as compared with many other countries, this Kingdom is favored ground for manufacturers of every clime who have merchandise to export and a foreign trade to cultivate. Hence it is that Germany and Belgium, by years of intelligent study of the wants of their prospective customers, have made such inroads upon the home trade of this Kingdom, and, in consequence, have caused so much astonishment and envy among competing manufacturers elsewhere at their success.

JAMES B. TANEY,

BELFAST, *July 31, 1896.* *Consul.*

COMMERCIAL TREATY BETWEEN NORWAY AND PORTUGAL.

The Storthing ratified on Saturday, July 18, 1896, by a vote of 72 to 40, the commercial and navigation treaty between Norway and Portugal negotiated December 31, 1895, and accepted by the Portuguese Cortes toward the end of March of this year.

This treaty with Portugal was necessitated by the Portuguese Government having given notice of withdrawal from the treaty of 1885 between the united kingdoms (Sweden and Norway) and Portugal. This notice was caused by the establishing in Portugal of a new protectionist customs system with considerably increased customs rates. While the treaty of 1885 was made with Sweden and Norway, the new one has been contracted by Norway only. The chargé d'affaires of the united kingdoms at Lisbon, Count Cronhielm, and Mr. Joachim Konow, of Bergen, conducted the negotiations in behalf of Norway. The main interest of the new treaty is the duty on clip fish. It is fixed at the amount which is now levied in Portugal—39 reis per kilogram (4.2 cents per 2.2046 pounds).

For many articles of export, however, Norway is treated as one of the most-favored nations. The following customs rates are fixed for other Norwegian articles, viz: Guano, 0.3 reis;* wood pulp, 1 reis; fish meal, 20 reis (2.16 cents); condensed milk, 200 reis (21.6 cents); and horseshoe nails, 100 reis (10.8 cents) each per kilogram (2.2046 pounds). For Portuguese wares, the following customs rates have been proposed on imports into

*1,000 reis=1 milreis=$1.08; the reis is therefore equal to 1.08 mills.

Norway: Cork articles, 13 öre (3.48 cents) per kilogram; cork without mountings and cork soles, free; common salt, free; wine in pipes, 11½ öre (3.08 cents) per kilogram up to a percentage of 23 per cent; wine in bottles, 11½ öre per liter (1.0567 quarts); wine in pipes at a percentage of 23 to 25, 36 öre per liter. These customs rates are identical with the present ones, with the exception of the alcohol rate of the wine being increased from 21 to 23 per cent.

With regard to this increase, the finance department states that the limit being fixed at 20, 21, or 23 per cent will hardly be of any importance, when considering the influence which the actual proportions between the taxation on wine and brandy will exercise, to the effect of supplanting the brandy by wine in the future.

The customs duty on brandy is about 52 öre (13.94 cents) per kilogram for brandy of 20 per cent, 55 öre (14.74 cents) for 21 per cent brandy, and about 60 öre (16.08 cents) for 23 per cent.

The majority of the customs committee favored the ratification, inasmuch as considerable advantages would be obtained for the fish export when considering the present depressed state of other markets.

This treaty may affect, under Article III of the treaty of 1840, some of the duties collected on our exports to Portugal.

T. B. FERGUSON,

STOCKHOLM, *July 20, 1896.* *Minister.*

NEW STEAMSHIP SERVICE FOR TAHITI.

On the 14th instant, the British steamship *Taupo* arrived at this port from Auckland, New Zealand. This steamer is owned by the Union Steamship Company, of New Zealand, which has decided to extend its business to the eastern Pacific and establish monthly communication between Auckland, New Zealand, and Tahiti.

The establishment of this line has caused some reduction in freight and passenger rates between Auckland, intermediate ports, and Tahiti. Rates as now regulated are about 15 per cent less than the steamship *Richmond* charged until the advent of the *Taupo*. The owners (Donald & Edenborough) of the steamer *Richmond* have also reduced their rates to the same figure as the Union Company offer.

The contest between the rival steamers is unquestionably advantageous for shippers, but must shortly prove unprofitable for both steamers, as the volume of freight between Auckland and Tahiti does not exceed 15 per cent of the total carrying trade of this colony.

The representative of the Union Steamship Company has informed me that his company is now canvassing the question of placing a steamer between Tahiti and San Francisco, to connect with their other boat at Tahiti, and thus inaugurate another steamship line between San Francisco and Auckland. He further informs me that the Oceanic Steamship Company's boats from San Francisco are obliged to refuse from 300 to 400 tons of

freight monthly, owing to lack of space. Thus a steamer between San Francisco and Tahiti, connecting here with a steamer for Auckland, would undoubtedly secure this freight.

The scheme of placing a steamer between San Francisco and Tahiti is entirely feasible and would be profitable from the very start. That it has not been accomplished is entirely owing to the fact that the owners of the three sailing vessels making a monthly service each way between San Francisco and Tahiti are disinclined to forego the handsome profits these vessels have earned for their owners, in which they are unquestionably justified.

Should, however, the Union Company inaugurate its present plan of placing a steamer between San Francisco and Tahiti, what would then become of these three American sailing vessels? I fear the answer is not very pleasing, as they must shortly be withdrawn from a trade in which they no longer would earn a profit, as a steamer of the class required would complete the trip in twelve or thirteen days, whereas the sailing vessels take from thirty to thirty-five days.

Concerning the profits that would be earned, it may be said that few other trades offer a more advantageous opening for the establishment of a steamship line. The colonial government of Tahiti has a standing offer for a subsidy of $15,000 per annum (which probably would be increased) for a monthly steamer service between Tahiti and San Francisco. The average freight per month from San Francisco to Tahiti is about 600 tons and from Tahiti to San Francisco about 500 tons. It would thus seem that a steamer would earn an excellent profit.

Aside from the pecuniary consideration, there is the question of American shipping being displaced by British, which would seem in this instance entirely unaccountable. For many years past, nearly one-half of the entire trade of this colony has been with the United States, and has also been carried in American vessels, and it is to be earnestly hoped that those now engaged in supplying goods of American production to this colony will duly consider the questions I have endeavored to place before them and avail themselves of the advantages within their reach.

J. LAMB DOTY,

TAHITI, *May 21, 1896.* *Consul.*

BRITISH COTTON YARNS FOR THE UNITED STATES

I inclose herein a table of the exports from Manchester to the United States of cotton yarns for the six months ended June 30, 1896. This arrangement includes the various counts, twists, and the quantities of each—the total weights and counts for each month separately, as well as for the whole half year.

I would venture to suggest that the table will be of interest to the New England cotton spinners and to the increasing spinners of the South, as well as to the various manufacturers of small wares, fancy goods, etc.

Exports of cotton yarns, including rovings, thread, and harness twine, shipped from the consular district of Manchester to the United States for each month during the half year ended June 30, 1896.

Description and count.	January.	February.	March.	April.	May.	June.	Total.
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
Miscellaneous thread, etc.	.....	1,000	200	884	2,713	805½	5,602½
Harness twine	1,000	.....	1,740	.....	1,406	.....	4,146
Rovings	58,868	54,264	50,255½	47,919	48,608	32,462½	292,377
10	.....	.....	.....	300	.....	1,000	1,300
3–20	.....	.....	200	.....	1,036½	.....	1,236½
4–24	.....	2,273	.....	.....	.....	.....	2,273
4–27	.....	.....	.....	1,066¾	.....	.....	1,066¾
30	380	.....	.....	792¾	920	.....	2,092¾
2–36	.....	1,000	.....	.....	.....	.....	1,000
2–40	400	1,101	70	.....	2,598	.....	4,169
2–45	1,000	869½	.....	.....	.....	20	1,889½
50	5,429	5,575	4,829¼	1,620	589½	3,334	21,376¾
2–50	1,246	150	.....	.....	614	500	2,510
4–50	.....	.....	.....	.....	1,095	.....	1,095
2–55	10,780	810	.....	.....	1,030	2,782½	15,402½
4–55	.....	.....	12¼	.....	1,061	880	1,953¼
60	7,241	5,954	5,034	1,804	1,106	.....	21,139
2–60	11,290	19,480	10,620	5,400	9,035¼	8,898	64,723¾
70	1,069	2,998	411	.....	1,222	.....	5,700
2–70	6,834	5,444½	15,100	14,246	11,900	11,810	65,334½
75	6,622	6,905	4,491	.....	891	5,909½	24,818½
2–75	705	300	300	.....	.....	.....	1,305
80	7,876	2,932	1,658	1,081	2,400	589	16,536
2–80	20,268	7,444¾	11,377	13,773¼	5,636¾	6,487¾	64,987½
83	.....	2,851	3,168	261	.....	260	6,540
90	4,187	6,248	5,038	4,467½	3,675	.....	23,615½
2–90	.....	1,180	.....	150	1,300	150	2,780
95	.....	1,673	2,392	2,792	2,790	.....	9,647
100	2,235	1,095½	5,879½	2,014	7,259½	7,388	26,871½
2–100	13,680	14,159	13,199¾	4,023¾	7,558½	6,785	59,406
105	.....	753	1,319	.....	.....	.....	2,072
110	4,016	1,403	557	297	576	.....	6,849
2–110	624	2,498¼	.....	.....	.....	.....	3,122¼
2–120	1,338	1,181	312½	900	951½	933	5,616
130	806	272	.....	.....	.....	.....	1,078
140	2,512	493	.....	.....	.....	.....	3,005
2–145	410	.....	701¼	.....	.....	481¾	1,593
All other counts	3,335½	3,365½	2,706	2,681	3,668¾	1,007½	16,764¼
Total	174,151½	155,673	141,571	107,473	121,641¾	92,484	792,994¼

WILLIAM F. GRINNELL,

MANCHESTER, *July 23, 1896.* *Consul.*

CHANGES IN THE NORWEGIAN TARIFF.

The following table shows the changes in the Norwegian tariff of 1895 made at the last session of the Storthing, recently adjourned, and sanctioned by the King. The changes came into operation on July 3 last, with the exception of those of the import duties on wheat and wheat flour, which came into operation only on July 22 last.

Changes in the import duties of Norway.

Articles.	Unit.	Tariff of 1896.	Tariff of 1895.
Spirits and brandies (including ether or naphtha, vinegar ether, and ether spirituous, when made by additions unfit for drinks):		*Kroner.*	*Kroner.*
Spirits	1 liter	0.10	0.10
Spirit varnishes and ethers	1 kilogram	.10	.10
Champignons, truffles, and other edible mushrooms	do	1.00	.36
Poultry, killed	do	.25	Free.
Seeds:			
Timothy	do	.10	Free.
Clover	do	.25	Free.
Percussion caps, all kinds	do	Free.	1.33
Glass for preserves and tinning	do	Free.	.27
Vegetables:			
Green and pickled asparagus, tomatoes, and artichokes	do	.30	Free.
Other	do	.05	Free.
Honey	do	.40	.20
Cloves	do	.25	1.00
Skins and hides, untanned and not prepared, cured	do	Free	.46
Potato flour, starch, and starch gum (dextrin)	do	.10	.05
Wheat	100 kilograms	.60	.22
Wheat flour	do	2.00	1.25

NOTE.—One liter=1.0567 quarts; 1 kilogram=2.2046 pounds; 1 kroner=26.8 cents in United States currency.

GERHARD GADE,

CHRISTIANIA, *August 1, 1890.* *Consul.*

COTTON-SEED OIL MILL AT SHANGHAI.

The prospectus of a new industry at Shanghai is before the public. It is called the Shanghai Oil Mill Company and proposes to manufacture oil from cotton seed. It is the logical result of the cotton mills at Shanghai and the consequent stimulus given to the cultivation of cotton in China. Since 1890, there have been forty-five new manufacturing establishments erected in Shanghai, and these are now in successful operation. The cotton factories are very large brick buildings, presenting a handsome appearance, lighted by electricity, and favorably located for shipping. The capital invested is large, as is the plan of operation, and they appear to be so conducted as to safeguard against any sudden reverse in the cotton market.

The increased output of cotton seed from the mills soon directed the attention of the business men at Shanghai to the profit of utilizing the cotton seed more economically, and the result is the prospectus for the first cotton-seed oil mill in China run by modern machinery. It is the belief of those engaged in this new industry that oil can be extracted at a saving of 15 per cent over the old and obsolete native system, and that purer and better oil than the native product can be obtained. I am informed that a few years ago it required the labor of six men to work a set of presses which turned out 6 tons of cake in ten hours, but that now, it requires the work of but two men. This evidences the important fact that even in China the subject of

labor saving has received practical attention and proves that the conservative opposition to improvement is not so firmly grounded and can be overcome by well-directed efforts, for during the past ten years, the motive power of the change from the old heavy-edged runners to the new method is estimated to have economized to the extent of 30 per cent.

The company begins with a capital of $250,000 (Mexican), divided into 9,800 ordinary shares and 200 founders' shares of $25 each, 102 of the founders' shares having been reserved for the promoters and the remaining 98 to be divided between the holders of the ordinary shares, which, if not taken up, will be allotted at the discretion of the directors. It is the purpose of the company to issue 7,800 shares for the present, and of this number 2,000 have been subscribed for; 1,500 are reserved for subscription at the outports of China and Japan, and the remaining 4,300 are now offered for subscription in Shanghai. The prospectus further states that the company is formed to manufacture all descriptions of vegetable oil, and that the output of oil from the native mills is insufficient to meet the general demand, besides being deficient in quality.

As the area suitable for the cultivation of cotton in China is almost as limitless as the supply of labor, and labor is very cheap, there can be no doubt that China will soon be one of the great cotton-producing countries in the world, and that cotton produced and manufactured in China will command serious consideration in all calculations with reference to the cotton market. It will not be safe to discount the cotton of China because it now grades low, for when the system of cultivation is changed, as sooner or later it will be, the grade will be very much improved. There does not appear to be anything in the soil or climatic influences to prevent the growing of a good grade of cotton in China. The plains are level, the soil fertile, and it looks like the soil that produces good grades of cotton in the United States; and the warm season over a large area is long, enabling the plant to grow and mature till October.

If the figures in Mr. Leopold Field's recent lecture are accurate, viz, that at the present time, almost 3,000,000 tons of cotton seed, equal to 90,000,000 gallons of oil, may be utilized and that, if preserved, it would find a ready market, there will probably be more than one cotton-seed oil mill at Shanghai. I have seen the order for the machinery of another cabled to the United States.

AMERICAN VS. CHINESE LABOR.

In this connection, a few observations kindred to the subject may be interesting.

The cotton mills now in operation at Shanghai employ about five thousand laborers at a maximum average wage per day of about 20 cents in silver. The food of these laborers consists of rice, cabbage, fish occasionally, and sometimes Chinese pork two or three times a month, the cost of the entire food supply not exceeding $2 (Mexican) per month. The wages and food appear satisfactory to the laborers, and there has been no complaint by them

either on account of wages or food. There are four large cotton mills now being built, and these will employ five thousand laborers more, the number employed by the four cotton mills now being operated. There will then be ten thousand laborers employed in the cotton mills at Shanghai at the cheap rate of about 10 cents in gold per day, and it is represented to me that, under the guidance of European supervision and by the aid of modern machinery, the manipulation of the cotton is as skillful in the cotton mills at Shanghai as in the cotton mills of any country.

The American laborer can not live on the wages paid to a Chinese laborer, and he would not and ought not to be contented with the food that a Chinese laborer eats with satisfaction. Such wages and such food would depreciate the manhood and the courage which have ever been the safeguard of our free institutions and the absence of which is so painfully evident around me in the bearing and character of laborers who receive their wages in money of such little value and subsist on food of as little sustenance.

The problem presented by the facts indicated may not be of serious import at present, but the thoughtful economist must recognize the necessity of a solution in the not very distant future. The skill of the American laborer in all industrial lines and his achievements in all industrial departments appear so well assured as to repel the idea of successful competition from Asiatic labor; but the nations that have attained commercial greatness have been mindful that the flag which covered their productions was their own national ensign, and that prosperity followed in the wake of the shortest commercial routes. In this immediate connection, it is gratifying to note that there has been a substantial admission of the superiority of American sheetings and drills for the year 1896 over the year 1895, as shown by the following table:

Year.	Sheetings.	Drills.
	Pieces.	*Pieces.*
1896	765,935	353,565
1895	420,921	224,352
Increase	345,014	129,213

When I received the above table, I asked the American firm that gave it to me if the increase shown by the figures was permanent. The answer was that it was probably permanent. There is needed in Shanghai a more distinctive American business. There is too much commercial mixing and partnership with other nationalities, and, as these generally predominate, American identity is too often lost. With the character of the true American merchant once impressed upon Asiatic business marts, aided by the elementary agencies of success, there will be no difficulty in achieving more decided results.

T. R. JERNIGAN,
Consul-General.

SHANGHAI, *July 24, 1896.*

CHANGES IN THE TARIFF OF NEW SOUTH WALES.

In pursuance of the policy of free trade and direct taxation which the Premier, the Honorable G. H. Reid, and his colleagues in the ministry so clearly placed before the country at the general elections of June, 1894, and July, 1895, and which received such decisive indorsement at the hands of the electors on both occasions, the second installment of the protective, or ad valorem, duties imposed by the Government of Sir George Dibbs in 1891 was removed on the 1st instant. The following tariff alterations took effect from that day:

Articles from which the duties have been entirely removed.

Articles.	Amount of duty.	
	s. *d.*	
Butter.....per pound...	0 1	$0.02
Cement, plaster, and hydraulic lime.....per barrel...	2 0	.49
Cheese, bacon, and ham.....per pound...	0 2	.04
Chicory, dandelion, and taraxicum (roasted, ground, or mixed with any other article)..do.....	0 6	.12
Chocolate, plain or mixed with any other article, and chocolate creams.....do.....	0 4	.08
Corn flour and maizena.....do.....	0 1	.02
Cocoa (prepared, paste, or mixed with any other article).....do.....	0 4	.08
Coffee (roasted, ground, or mixed with any other article, except coffee essence).....do.....	0 6	.12
Fish (dried, preserved, or salt).....do.....	0 1	.02
Iron, galvanized (in bars, sheet, or corrugated).....per ton...	40 0	9.73
Galvanized wire netting.....do.....	30 0	7.29
Milk, condensed or preserved.....per pound...	0 1	.02
Rice.....per ton...	60 0	14.59
Salt (rock salt free).....do.....	20 0	4.86
Sporting powder.....per pound...	0 3	.06
Shot.....per cwt...	5 0	1.22
Timber:		
Dressed.....per 100 superficial feet...	3 0	.73
Undressed.....do.....	1 6	.36
Doors, sashes, and shutters.....each...	2 0	.49

Diminishing duties.

Oil (kerosene, naphtha, and gasoline), reduced from 6d. (12 cents) to 3d. (6 cents) per gallon.

Oils (except linseed, raw or boiled, fish and seal oils, black whale, cocoanut, sperm, palm, and essential oils), reduced from 6d. (12 cents) to 3d. (6 cents) per gallon.

The remaining 3d. (6 cents) on oils is to be removed on the 1st of July, 1897.

The first and the great bulk of the tariff remissions were effected on January 1 of this year,* and, while the trade of New South Wales can not be said to have undergone a revival in the interval, the cause for this can not fairly be ascribed to the change of tariff policy. The severe drought of the latter part of 1895 and the beginning of this year, besides playing havoc among sheep, cattle, and dairy stock and reducing the wool clip by about 30

*See "Fiscal changes in New South Wales," CONSULAR REPORTS No. 189 (June, 1896), p. 293.

per cent, also very considerably reduced the wheat and other grain crops. The export of wool was thus very much smaller than usual, and the shipments to other countries of dairy products were entirely suspended, while, at the same time, it was found necessary to largely increase the importations of wheat, etc. About fifteen wheat-laden ships have arrived during the last few months from California, and five more are expected.

The area of land sown with wheat in New South Wales, however, is now much larger than it has ever been before, and the crops which will be reaped in December are at present in excellent condition. Should the weather continue favorable, it is estimated that the yield will not only supply the needs of the home market, but will permit of a quantity being exported, a circumstance hitherto unknown in the history of the colony.

The season so far has been a good one also for stock, and it is anticipated that the second half year will furnish results of a much more satisfactory character than those at the end of the six months just expired.

STEWART KEIGHTLEY,

NEWCASTLE, N. S. W., *July 3, 1896.* *Vice-Commercial Agent.*

FLOOD ON BLUEFIELDS RIVER BANANA LANDS.

It is reported here that the banana crop on the Bluefields River has been destroyed by a flood. I have not heard from our consular agent, but I inclose herewith a copy of a letter received by Mr. Bingham, the British consul at this port, from Mr. Harrison, the British vice-consul at Bluefields.*

THOMAS O'HARA,

SAN JUAN DEL NORTE, *July 31, 1896.* *Consul.*

LETTER FROM MR. HARRISON TO MR. BINGHAM.

BLUEFIELDS, *July 29, 1896.*

MY DEAR MR. BINGHAM: I think a little account of the flood will interest you. It has been most disastrous, and the water has risen higher than the memory of the oldest inhabitant can recall.

After the constant heavy rain of the last few weeks, something of the sort was expected, and on Friday, the 24th, the water began to rise rapidly at Rama. The first alarm at Bluefields was the arrival of the *Hawk* on Saturday afternoon, loaded with people, who reported the whole town of Rama under water and the flood still rising. Some of us immediately went to the palace to organize a relief expedition, and we determined to start at once with provisions in the new steamer *Saga*. A committee was organized to collect subscriptions, and by 6 p. m. we left for the Bluff in three launches.

A fearful stream was running at the Bluff and, the *Saga* not having steam up, it was not till 9 p. m. that we started up the river, considerable excitement being caused by the *Hawk* * * * being carried out to sea, the machinery having broken down. We eventually tugged her in after breaking three cables in the effort.

* NOTE.—A report from Consul O'Hara, dated San Juan del Norte, August 19, states that persons passing that place from Bluefields say that "the early reports regarding the destruction of banana plants and suckers were exaggerated."

The party on board the *Saga* included Reyes, Petersen, Waters, and self, and about ten others, with Oliver Simmons as pilot (and wonderfully well he managed the ship, which, being a double-screw and a 10-knot boat, was our only hope of reaching Rama).

The first wreckage we came upon was the Rama Government wharf floating down almost whole; but the water was thick with every conceivable object, and, in spite of the full moon, it was dark and raining.

It was 4.30 a. m. before we reached Rama. Barrow's store and houses were still standing (it has since floated off), but under water to the roof; so you can imagine the height of the water above the river banks. It was like a great lagoon planted at intervals with trees and bananas.

From Cama to Mango every house was under water, most of them to the roof, the people having all escaped in their boats, the cattle standing about on high spots up to their necks in water. At Mango, we found two of Brown & Harris's launches, with Harris and all his store people, tied to the cotton tree in the field behind the house, which was filled with water some feet above the floors. On the other bank of the river, Wiltbank's house was crowded with people and was one of the very few houses on ground high enough to have escaped. As all the people were safe, we hurried on. Everywhere it was the same sight—what was left of the houses and just the tops of the banana suckers appearing above the water and a wide stream full of wreckage rushing down where the river had been before.

At 11.30 a. m. we reached Rama. The whole town was under water 10 feet deep—the single-story houses nearly up to the roof, the two-story houses in a very crooked-looking condition. Upward of 300 people still remained in the balconies, on the roofs, or paddling about in boats. All of them had spent the preceding night on the hill behind the town, fearing that all the houses would be swept away. Their things—everything—were soaked, and they were in a most deplorable condition. The only house which escaped fairly well was Orr & Laubenheimer's, which, being on a very high bank, the water only reached the tops of the counters. Brown & Harris's warehouse was one of the first buildings to be swept away, and their store was filled with water up to the upper balcony. All the single-story houses were, of course, completely swamped, but most of them remain standing.

It was still raining heavily when we arrived, but the water had already receded 3 feet. I went all through the streets in a boat, and it was a distressing sight to see the condition they were in.

We had brought up about $500 worth of provisions with us, and the governor, who seemed to be acting very energetically, immediately began a distribution of food, and we handed over the rest of the things to the relief committee there. We stayed until 4 p. m., taking on board about fifty fugitives, the rest wishing to stay and guard what remained of their property.

As far as we know, only two lives have been lost.

On the Siquia and Rama rivers, it was said that the flood had been higher than below Rama and that only two plantation houses remain standing.

On our return we found the water some feet lower. At Mango the Brown & Harris party refused to accompany us, so we left them some provisions, and there they remained tied to the tree in their launches in the middle of the field. We reached the Bluff at about 10 p. m., and eventually landed all our moist passengers after a most exciting day.

Our relief committee—Reyes, Weil, Belanger, Waters, Sheperd, and self—collected some $2,000, besides the Government $2,000. I fear, however, that there will be much distress to deal with, besides the immediate necessity of food and clothes for so many unfortunate people.

The flood has now receded from Rama, and the river is reputed to be within its banks again; but it seems that the fruit trade must be paralyzed for some time to come, and that probably all the existing suckers will be destroyed. Fruit prospects are therefore far from promising. People are waiting anxiously for reports from the coast, as, if the same floods have occurred in the other rivers, only a cyclone is required to put the finishing touch to the Mosquito Coast.

NOTES.

Responsibility and Powers of High Federal Authorities in Mexico.—Under date of August 11, 1896, Minister Ransom transmits a copy of the law regulating articles 104 and 105 of the federal constitution relative to the responsibility of the high federal authorities, as published in the Diario Oficial of June 17, 1896. The following excerpts and abstract, taken from the translation of the Spanish inclosure accompanying Minister Ransom's dispatch, cover the main points of the law.

* * * * * * *

ARTICLE 1. Deputies, senators, magistrates of the supreme court of justice, and secretaries of departments are responsible for the common offenses which they commit during the time of their term of office and for the crimes, defaults, or official omissions incurred while in the discharge of their duties.

ART. 2. The President of the Republic is likewise responsible; but during his term of office, he can only be accused for the crimes of treason against the State, express violation of the constitution, attacks on the freedom of the ballot, and grave crimes of common order.

ART. 3. The governors of States, as agents of the federation, are responsible for infractions of the constitution and federal law.

ART. 4. Only the General Congress, in the manner and form prescribed by the constitution and by this law, is competent to take cognizance of the official responsibility of the high functionaries referred to in article 103 of the constitution; notwithstanding that said responsibility be exacted after the duties of the functionaries have ceased, but within the term set forth in the constitutional article 107.

ART. 5. In order to proceed against the high functionaries referred to in the preceding article for crimes or offenses of common order, it is necessary that the grand jury declare previously that there is sufficient cause to proceed against the accused.

ART. 6. The deputies and the senators, the President of the Republic, the magistrates of the supreme court of justice, and the governors of the States, from the day of their election, and substitutes of the deputies and senators, from the time in which they be summoned to occupy seats in their respective houses, shall enjoy the constitutional privileges.

ART. 7. The aforementioned federal functionaries shall not enjoy constitutional liberty for common crimes, official offenses, faults, or omissions committed by them during the discharge of their duties, and by reason of some employment, public charge, or commission which they might have accepted in the period in which that privilege is enjoyed, unless that at the same time they are exercising their proper functions. In this last case, they will be judged by the proper party, after the grand jury has declared that there is sufficient ground for procedure.

ART. 8. In said cases, in order that the cause may be begun when the high functionary may have returned to the discharge of his proper functions, he must be proceeded against as prescribed by articles 104 and 105 of the constitution.

In civil suits, there is no privilege or immunity for any public functionary.

Articles 10 to 18 relate to the appointment, by the House and Senate, of an investigating committee, to which all charges preferred against high

functionaries are submitted. These articles also define the procedure and mode of investigation and the right of the accused and accusers therein. Should the committee conclude that the charges can not be sustained, they will so report to the House, when the matter ends. Should the committee find otherwise, it will report as follows to the House: "There is cause for proceeding against A B for the crime of which he is accused.

Article 19 provides that, although the accusations have been sustained and the committee so reports to the House, the House must resolve, in case the offense is of that class which must not be prosecuted during the discharge of a public trust by the accused, that there is no case of procedure against A B for said offense.

Articles 20 to 25 relate to the House of Deputies constituting itself into a grand jury for the trial of the accused, the rules governing the trial, and the right of the accused and accuser to appear before the House either in person or by attorney.

If the accused be acquitted by the House, he will continue his functions; if he be found guilty, he shall be placed at the disposal of the Senate, to which shall be remitted the verdict of the jury of accusation.

The procedure in the Senate is almost identical with that which has taken place in the House of Deputies—a Senate investigating committee being appointed, before which the accused and the accuser can appear in person or by counsel; the findings and report of this committee to the Senate; the Senate constituting itself a grand jury for the trial of the accused; the appearance of the accuser and the accused, in person or by counsel, before the Senate as a grand jury, etc.

When the accused is found guilty of a crime of the common order, in addition to an official crime, he shall, after being sentenced by the Senate for the official crime, be turned over to the competent judge, so that he may also be tried for the common crime.

Those condemned for official crimes can not be granted the grace of pardon.

Articles 104 and 105 of the federal constitution are as follows, as given in the Hand Book of the American Republics:

ART. 104. If the crime shall be a common one, the House of Representatives, formed into a grand jury, shall declare, by an absolute majority of votes, whether there is or is not ground to proceed against the accused. In the negative case, there shall be no ground for further proceedings; in the affirmative, the accused shall be, by the said act, deprived of his office and subjected to action of the ordinary tribunals.

ART. 105. The houses shall take cognizance of official crimes, the House of Deputies as a jury of accusation, the Senate as a jury of judgment.

The jury of accusation shall have for its object to declare, by an absolute majority of votes, whether the accused is or is not culpable. If the declaration should be absolutory, the functionary shall continue in the exercise of his office; if it should be condemnatory, he shall be immediately deprived of his office and shall be placed at the disposal of the Senate. The latter, formed into a grand jury of judgment, and, with the presence of the criminal and of the accuser, if there should be one, shall proceed to apply, by an absolute majority of votes, the punishment which the law designates.

Treaty of Commerce Between Mexico and Belgium.—Under date of August 3, 1896, Minister Ransom transmits to the Department copies (Spanish and English) of the treaty of friendship, commerce, etc., concluded by both powers on June 7, 1895, and published in the Diario Oficial of Mexico on June 12, 1896. The treaty is a favored-nation treaty, stipulating that the citizens, ships, products, etc., of each within the jurisdiction of the other shall be entitled to the consideration given to those of other nations with which the contracting powers have similar treaties.

Foreign Students in French Medical Colleges.—Under date of July 24, 1896, Mr. Henry Vignaud, secretary of the American embassy at Paris, reports that foreign medical students desiring to graduate in one of the medical schools of France were heretofore allowed certain facilities for entering those schools. Graduates of well-known foreign colleges or those holding diplomas of medicine from reputable foreign institutions were permitted, upon application through their respective embassies, to follow the regular courses of the French medical schools exactly like the French students who had graduated from French faculties, and at the end of the course—in the fall, if successful in the final examination—were awarded diplomas similar to those granted to French students, which carried with them the right to practice in France.

According to regulations issued on July 21, 1896, foreigners desirous of obtaining the French diploma of doctor of medicine, which will entitle them to practice in France, will have to submit to the conditions imposed upon French students, for the diplomas obtained abroad or at any private institution will not be considered, and before being allowed to register at any French medical school, they will have, as in the case of French students, to produce a French State diploma of "Bachelier de l'Enseignement Classique," and the "Certificat de sciences physiques, chimiques et naturelles."

To students who do not desire to practice medicine in France, the old facilities, even enlarged, will be granted.

The reason leading up to the foregoing regulations was the large number of foreign graduates who remained in France to practice their profession. Mr. Vignaud adds that the new regulations do not apply to foreign students already entered at the French medical schools.

Welsbach Light Patents in Germany.—In a letter addressed to the Secretary of State, dated Philadelphia, July 13, 1896, Mr. Randal Morgan, vice-president of the Welsbach Light Company, says:

On behalf of the Welsbach Light Company, a corporation of the State of New Jersey, I desire to call to your attention an article written by Mr. Frank H. Mason, consul-general at Frankfort, dated February 8, 1896, entitled "Auer-Welsbach patents and monazite in Germany," to be found

on pages 242, 243, 244, and 245 of volume 51, No. 189, CONSULAR REPORTS, June, 1896, issued by the Government Printing Office, in which the impression created is that the essential steps in the practice of the inventions of Dr. Carl Auer von Welsbach, of which this company is the owner in the United States, have been held in Germany to be public property, or, to express it in another way, are not covered and protected by the German patents which were issued to Dr. Auer or to his assigns.

I hand you herewith copy of letter written by Dr. Charles F. Chandler, of the School of Mines, Columbia College, New York, to the Engineering and Mining Journal and published by that journal in its issue under date of March 7, 1896.

This letter of Dr. Chandler was written with the facts before him and with a thorough knowledge of the inventions in question and of the course of the litigation abroad. There had at that time been no litigation instituted in this country upon the patents granted on the Auer inventions, which are known here as the "Welsbach patents."

It is not surprising that Mr. Mason should not have been able to clearly master the situation, or that he should have been misled both in his understanding of the patents and in his understanding of the substance of the decisions. It is surprising that, with the superficial knowledge indicated by his article, he should have ventured officially, as consul-general of the United States, to in effect announce publicly that Dr. Auer's patents did not protect his invention, which is known in this country as the "Welsbach light." * * * On page 243 he states: "This importance of thoria seems to have been realized by Dr. Auer only after long experiment." As a matter of fact, the original views of Dr. Auer were that thoria played an even more important part than it does in his invention, and he has appealed from the decision of the German courts, which did not give him the monopoly of the use of thoria for incandescent purposes when used pure and alone, a use which he believed himself to have been the first to have discovered and which he believed himself to have been entitled to a patent for.

The writer, after the submission of the German cases to the courts, had the opportunity to discuss the same with Dr. Auer, in Vienna, and with counsel who represented the patents in Germany, and is therefore in a position, when making the above statement, to probably state the facts more accurately than Mr. Mason could.

Mr. Mason's theories are based upon a misconception of what he considered to be the most important fact. The whole basis of his argument is a misunderstanding.

Further, the decision of November 7 is not the decision of the greatest importance. The most important decision in the German cases was rendered later, a report of which is published in the Journal of Gas Lighting, Water Supply, and Sanitary Improvement, under date of February 11, 1896.

Further, these decisions, instead of having led to a vigorous competition, have had the contrary effect, the most vigorous competition having existed

prior to November 7 and having passed its greatest show of activity during January of this year, when the litigation was decided finally, subject only to an appeal, and so decided as to discourage a continuation of the vigorous efforts which the competitors were theretofore making.

The article in question states the facts and draws a conclucion with a curious inversion of their order.

It can be readily perceived that the article of Mr. Mason will greatly stimulate the efforts of the German manufacturers to introduce their goods in this country, which they are now trying to do, owing to their difficulties abroad, and will also encourage the thousand and one infringers who are trying to render nugatory the patent which the Government of the United States has granted.

COPY OF LETTER FROM DR. CHARLES F. CHANDLER, OF THE SCHOOL OF MINES, NEW YORK, TO THE ENGINEERING AND MINING JOURNAL.

SIR: Having carefully read the articles which appeared in your last two issues, I take the liberty of sending you the following brief statements with regard to their present condition of litigation concerning the Welsbach patents:

In Germany, suits were brought against all parties who were manufacturing Welsbach mantles. These infringers applied to the imperial patent department to have the validity and scope of the patents determined. These proceedings acted as a stay to the infringement suits, and the decision which has recently been rendered was given by the patent department. This decision sustains the validity of the patent under the broadest possible interpretation, covering the method of manufacturing the mantles, as well as the fluids themselves employed to impregnate the fabric, composed of solutions of two or more of the rare earths. The following is the language of the broad claim, as allowed by the decision:

"The treatment or method for making incandescent gas-burners by the impregnation of the tubular-shaped woven and eventually combustible textures with the help of nitrates or sulphates, as well as generally of such destructible compounds as, on ignition, remain as oxides," etc.

That the decision was in favor of the patent is shown by the fact that the court assessed upon the infringers the costs of the court and three-fourths of the lawyers' fees.

So far as known at present, these incandescent mantles can not be made except by following the processes of the patent, the monopoly for which has thus been given to the Welsbach patent.

When the decision of the patent-department tribunal was rendered, the infringers appealed to the Reichsgericht at Leipsic to have the decision reversed. This appeal can not be settled under one year. In the meantime, the infringers appealed to the Landgericht in Berlin to have the suits, which had been brought against them, stayed until the court at Leipsic should have decided the appeal. This would have permitted the infringers to continue their illicit trade for the period of another year or more, but the Berlin court refused the application and ordered the suits to proceed. They are now being vigorously pushed. The question that remains to be decided is simply that of infringement, the patent department having settled the scope and validity of the patents.

As a consequence of this decision, the shares of the German Welsbach Company have advanced materially in value, from 730 to 840, while the shares of the Meteor Company, the leading infringer, which were quoted in November at 170, have dropped to 10.

In Austria, the Welsbach patents have received complete protection from the authorities. The supreme court recently declared that as long as the Welsbach patents continued in force no competition whatever against them will be tolerated. On every application, injunctions

have been granted against infringers, prominent among which was the company in which Mr. Frederick Siemens was the controlling spirit.

In France, a decision favorable to the Welsbach patents was given, and, so far as the litigation has proceeded, it has been uniformly in favor of the patents. The case is now in the court of appeals.

In England, infringers have been promptly and vigorously proceeded against. Among the most prominent of these, against whom suits are now pending, are the Meteor Company and the Sunlight Company. The case against the latter has been ready for trial some months and is simply waiting for the assignment of a judge to hear the case.

In the United States, the patents under which the American company is operating are of a far more comprehensive character than those taken out in foreign countries, for the reason that they not only cover broadly the method of manufacture and all the impregnating solutions which are of any value, but they also cover certain minor details which have been found just as essential to the successful manufacture of mantles as the original inventions themselves.

C. F. CHANDLER.

NEW YORK, *March 5, 1896.*

STATEMENT OF CONSUL-GENERAL MASON.

A copy of Mr. Morgan's letter, with Professor Chandler's statement, having been forwarded to Consul-General Mason, at Frankfort, Mr. Mason replies as follows, under date of August 15, 1896:

I have to acknowledge the receipt of your letter of the 3d instant inclosing (1) a copy of a letter from Prof. Charles F. Chandler, of New York, dated March 5 last, to the Engineering and Mining Journal, and (2) a copy of a letter from the vice-president of the Welsbach Lighting Company, of Philadelphia, attacking a consular report submitted by me early in February last, summarizing the effects which at that time appeared to have resulted from the decision of November 7, 1895, by the imperial German patent office, concerning the scope and validity of the Auer von Welsbach patents in Germany.

In reply, I have to say that the version of the decision itself, as embodied in my report, was furnished to me by a reputable patent attorney of this city, who had been just previously in consultation with the counsel of the inventor at Berlin. As to the probable ultimate effects of the decision, I consulted, personally, not merely once, but repeatedly, an eminent engineer at Wiesbaden, who is a practical expert in incandescent gaslighting.

My description of the first and obvious effects of the decision in Germany, viz, an immediate reduction in the price of the Auer von Welsbach burners and the aggressive attitude thereupon assumed by the makers of rival incandescent gaslights, simply reported what was a matter of common knowledge and observation. The technical and daily journals were blazoned with advertisements of competing incandescent burners, backed by editorial comments to the effect that, whatever might be the ultimate result of the litigations, their effect thus far had been to break a monopoly and bring the cost of the original Auer von Welsbach burner within reach of the general public.

The consular report which is now complained of states at the outset that the decision of November 7 had been "apparently a substantial victory for the inventor," and then describes as "anomalous" the situation which

immediately followed its promulgation. Nothing was therein predicted as to the effect of subsequent decisions or litigations, which have modified the case in this country and elsewhere between the time when my report was written and the date of its publication, five months afterwards.

The situation in Germany, as then described, remains outwardly unchanged to-day. The imperial German patent office and the courts have confirmed the validity of the Auer von Welsbach patents in Germany. The recent decision of the imperial supreme court at Leipsic declares, in opposition to the patent office, that the use of impure thoria—that is, thoria combined naturally with other oxides as impurities—is protected by the German Auer von Welsbach patents, leaving undecided as not in litigation the point whether or not the use of an artificial mixture of thoria and other oxides, identical in composition with the natural combination used by Auer von Welsbach at the time of obtaining his patents, is an infringement.

Meanwhile, the competition of rival incandescent gas-burners goes on in this country unchecked. No less than five different ones, all similar in general principle and appearance to the Auer, are sold openly in Frankfort to-day, and the reduced prices which were established immediately after the patent office decision of November last remain either unchanged or have been still further reduced. The Meteor Gaslight Company claims—with what justice I have no means of knowing—to have discovered a method of making an incandescent mantle without the use of thoria.

Commercial Relations of Brazil.—In a dispatch from Petropolis, June 27, 1896, Hon. Thomas L. Thompson, United States minister to Brazil, says:

I have the honor to transmit, under separate cover, a copy of the report of the Minister for Foreign Affairs for 1896. That portion of the report that treats of international relations I have had translated and inclose herein. The minister appears to be thoroughly imbued with the purpose of bringing the South American republics into a closer union, but at the same time keeping Brazil aloof from all complications with European nations. He says: "The restoration of peace, the return of financial prosperity, the integrity of the public credit, and the improvement in the productive agents of the country impose upon us a policy which will prevent the difficulties of others from being added to our own," adding that an endeavor should be made to harmonize the conflicting interests of the South American republics, establishing in their relations sentiments of justice, loyalty, and confidence, but not disturbing the solution of foreign or domestic questions in which any of them may be concerned.

An elaborate plan of international communication is set forth, the most important suggestion in which is the outlet afforded Bolivia to the Atlantic by the Paraguay River.

In regard to the United States, he says: "Without claiming a share in the responsibilities of the international situations which the vigorous policy

of the United States of America creates and defends, Brazil can not ignore or withdraw from the influence which it exercises on the destinies of South America."

A commercial union between Chile, Argentina, and Brazil is advocated. The report observes that it is impossible for the South American republics to preserve an indifference to each other. Almost all of them are bounded by tributaries of either the Amazon or Plate rivers and necessarily have common economic interests; and, while such interests may not in all cases justify treaties of commerce and navigation, yet the scope of production in the several republics suggests conventions which will assure the most advantageous markets. The dominating influence of Brazil and Argentina on the Atlantic coast and Chile on the Pacific counsels an alliance between these countries for the proper development of commerce in South America. The economic conditions of Rio de Janeiro, Buenos Ayres, and Valparaiso are so identical that sooner or later they must combine. The fact that German sugar is imported into Brazil and Chile and sold in competition with the national product, on account of the cheap freight rates, is pointed out and an amendment to the law regulating coast navigation is urged.

It is evident that this country is making great efforts to bring about a combination between itself, Chile, and Argentina. How far these efforts have succeeded, I am uniformed. It is noticeable, however, that the representatives accredited here from both are men of much influence and high standing in their countries and have but recently arrived. That they are on some special mission is evident. The President of Chile, in a recent message, is reported to have recommended the abrogation of that country's commercial treaties with Europe, and says: "The Government has been engaged in opening a road by which our [Chile's] commercial relations with other American countries may be strengthened, and it is now engaged in negotiating an agreement of this nature with Brazil."

"In regard to the relations with the United States and European nations," he says, "treaties of navigation and commerce can not be regarded under the same aspect. The problem consists in insuring increasing exportation and in permitting importation to a salutary extent, without injuring the legitimate aspirations of national industry."

Referring to the tariff, he recommends that Congress fix a maximum and minimum schedule, conferring upon the Government authority to change the duties, as circumstances may demand, between the two extremes.

The rest of the volume contains an exposition of the condition of the various international questions in which Brazil is engaged.

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Silver Currency in Nicaragua.—United States Minister Baker, in a dispatch from Managua, June 18, 1896, says:

Some five years ago, a citizen of the United States, an invalid soldier, who had shortly theretofore drawn a back pension of some $4,000 in United

States gold, came to one of the Central American States to try the benefit of the warm, dry air of this climate upon the disease from which he was suffering. At that time, gold commanded a premium in the country to which he came of 35 per cent. After his arrival, he entered the banking institution of the town in which he had concluded to stop and arranged to deposit a sufficient amount of his gold to net him $4,000 in the currency of the country, the basis of which was and is silver. He carried away his certificate of deposit, feeling rather good that, although it was for full $4,000 and bore 8 per cent upon that amount, to be paid to him semiannually, it had cost him a little less than $3,800. He continued to draw his interest promptly for four years with much satisfaction, not having been disturbed by the continual rise in the premium on exchange. By the time gold had advanced to a point threateningly near double that of silver, making his deposit worth but a trifle over half of its face value, he received notice that the bank would no longer pay interest to depositors. He came to advise with me as to what he could do. I saw but two things to suggest, either withdraw his money, as the bank desired, or leave it for safe-keeping, trusting to the operations of commerce to bring more favorable conditions at another time. The latter course was his preference. A year later, he drew from the bank his $4,000 in silver coin, with which he was able to purchase $1,731 in gold.

Passport Regulations in Zurich.—Consul Germain, of Zurich, under date of July 30, 1896, transmits the following statement as to regulations affecting persons settling in or visiting the city of Zurich:

Every person desirous of settling or temporarily residing in this city, not a citizen thereof, must procure a permit from the authorities. For this purpose, every person intending to reside here must, within eight days from his arrival, report personally to the supervisor's office of the district in which he wishes to reside and deposit his or her indentification papers.

Citizens of the city of Zurich who have been absent must, upon their return, report within the same period and deposit the documents they obtained from the authorities before they left the city. Sons and daughters residing with their parents must, upon attaining their twentieth birthday (majority), procure and deposit their home papers. People visiting friends, touring, or living in hotels are exempt for a period of thirty days from the above formalities.

Whoever changes lodgings must, within four days, report the change, else be fined at the rate of from 3 to 15 francs for every offense; and the landlords, renters of rooms, employers, or heads of families are held responsible and must ascertain that the parties, being their servants, lodgers, clerks, etc., when leaving their premises, have duly reported. If they fail to do so and the removing parties have neglected to report, then both the employer and employee, etc., will be fined in the sum above stated.

There are many American students of both sexes coming to this city every year to attend the university or Federal Polytechnicum, but invariably reach here without passports or other means of identification. Some of them find it rather difficult to get proper identification whereby to secure a passport and are put to great inconveniences and trouble before the consul can indorse their application for same.

Further, a passport will cost applicants $2, plus 8 cents postage, whereas, without much trouble or inconvenience, they might secure that document from the Department of State at Washington for the sum of $1 before leaving the United States. I would therefore enjoin on every American coming to reside in Europe for a given period, and particularly those desirous of attending the higher schools—which they can not attend before first depositing their papers—not to fail to procure a passport at home. Tourists traveling from place to place are not required to have passports; still, it is always useful to have one, either for identification purposes or to establish nationality in case of accident or trouble.

Market for Agricultural Produce in Switzerland.—Consul Germain, of Zurich, reports, under date of August 1, 1896:

The Swiss import and export statistics for the three months ended March 30, 1896, show that animals for slaughter (beef cattle, as well as hogs) were imported in much smaller quantities, as demonstrated by the animal census published April 20, 1896, owing to the supply of domestic animals being nearer to its normal status, and the failure of the fall hay crop having compelled many to reduce their home-raised stock during the winter months, supplying butchers and reducing the demand for imports. Foreign markets, however, supplied Switzerland with an increased quantity of young cattle and sucking calves. Prices are ruling about the same as for the corresponding period in 1895. For hogs, however, prices declined. The importation as well as prices of horses have increased. North America is now competing successfully with Germany and France on the Swiss as well as on the general European market.

Concerning the exportation of beef cattle (with the exception of stock bulls), the quantities and prices have sustained a marked decline. Meat, especially canned beef, has been imported in larger quantities at a slight price reduction: First quarter 1894, 3,134 metric centals;* first quarter 1895, 7,262 metric centals; first quarter 1896, 11,044 metric centals.

The export of cheese, of which the average price has declined 5 francs (about $1) per metric cental, has only increased by 5,377 metric centals, or 8⅔ per cent over last year's low figures.

The butter export to Paris has as yet not recuperated from the depression existing during the tariff war with France.

Condensed-milk export has fallen off. Butter and lard were both lower in price. The import of eggs is on the increase.

* 1 metric cental = 220 pounds.

Artificial forage and maize were imported in much larger quantities than for the corresponding period of last year, principally from France, Italy, and Russia, owing to the shortness of the fodder crop in 1895. Hay, straw, and seeds were imported in excess of last year, and the same was the case with rye, oats, and meals, for the same reason. The import of barley, however, has considerably decreased. The wheat import declined 110,000 metric centals, or 10 per cent, as against 1895, and no potatoes to speak of were exported. The high prices of fruits have reduced consumption and the consequent importation thereof. The short grape crop of 1895 stimulated an increase of the wine imports. The excess over the first quarter of 1895 is 34,000 hectoliters (about 900,000 gallons) from France, 54,000 hectoliters (about 1,430,000 gallons) from Spain, and 10,000 hectoliters (264,180 gallons) from the Danube countries.

The increase in the import of agricultural machinery amounted to 100 per cent.

Electric Plant for the City of Mexico.—Consul Germain writes from Zurich, July 16, 1896:

In the official commercial organ of Switzerland, I notice that the consul of Mexico stationed in this city sent a communication to the editor of the paper, wherein he states that the authorities of the City of Mexico are about to introduce electric lighting and invites bids from Swiss firms engaged in the manufacture of electric appliances and willing to enter into a contract to put in the plant. He states that upon application to him either by correspondence or by a call at his office, he will submit plans and specifications, also furnish detailed information as to just what is required. This reminds me that on my last east-bound trip while crossing the ocean to return to my post, I met a Haitian from Port-au-Prince, who stated he had a concession from the authorities of his native city to supply it with electric light. He was on his way to Europe to see where he could buy the best plant and appurtenances for the least money. A prominent Frenchman engaged in the coffee business near Port-au-Prince confirmed what the concessionaire told me.

It strikes me that our neighbors are going out of their way to secure in Europe what they could find as good, if not better, and at as low a figure nearer home.

I have had an idea that we can beat the world on electric machinery and appliances, and I dislike to see business slipping away from us, right by our doors. It seems to me the attention of American firms engaged in that line of trade should be called to the above information.

Exclusion of Foreign Hogs from Switzerland.—Consul Germain, of Zurich, reports under date of July 18:

The Swiss Government, at a session of the federal council held yesterday, decided to forbid the entry of foreign live hogs into Switzerland. In

exceptional cases, the Department of Agriculture, if it be deemed advisable, can issue a permit admitting foreign live hogs to entry, provided their weight is over 60 kilograms (132½ pounds) and the cantons interested guaranty that the animals will be kept in well-ventilated stables, which are so constructed as to permit proper disinfection, and remain until slaughtered under the supervision of the sanitary officers.

Hogs of a weight less than 60 kilograms will be admitted in exceptional cases if the Agricultural Department consents, but then only subject to a thirty-day quarantine.

A Roller Steamboat.—Consul Germain, of Zurich, under date of July 25, 1896, says:

A new invention, recently made by the French ship engineer Bazin, has been of late much commented upon by the public press in Europe, as well as by prominent experts in the shipbuilding line. The new invention, called the "Express Rouleur Bazin" (Bazin's Roller Express), promises, it seems, a successful innovation in shipbuilding. By this system, it is claimed, the movement of boats will be increased to about 100 kilometers (62 miles) per hour, that is, nearly the time made by the fastest express trains on the Continent.

The name "rolling boat" indicates that the new boat will not slide, as is the case with ships now in existence, but roll on the water by means of enormous hollow wheels or rollers. The boat consists of a large platform (holding the boilers, machinery, saloons, cabins, etc.). This platform is supported on each side by movable hollow wheels (rollers) of an enormous size, presenting quite an unusual appearance. The propelling power of the machinery is used partly to propel the whole by means of screws or paddle wheels, but principally to propel the mighty hollow side rollers.

The inventor, in using his new system, is considerably reducing the resistent friction of the water, and thus attains, with a minimum of expense and consumption of power, a maximum rapidity up to 50 knots and over. The results obtained by Mr. Bazin with a 5¼ meters long model boat on the Lake of Vincennes have encouraged him, so that it is now his intention to make further trials with one of greater dimensions.

The first rolling boat, the *Ernest Bazin*, is in course of construction in the dockyard of St. Denis. It will be of 280 tons capacity and measure 12 meters in width by 40 meters in length and be of 750 horsepower. The power produced by the machinery will be transferred to a screw and three pairs of side rollers, each of them to be 10 meters in diameter.

Mr. Bazin intends his boat to make her first trial trip within a few weeks by way of the Seine across the English Channel and up the Thames to London.

To judge from the comments made by the press, it really seems that Mr. Bazin has solved a problem thought to be insolvable heretofore; and, if successful and maintainable on the high seas, the invention may produce the fastest boat in existence.

Tobacco Culture in Turkey.—Vice-Consul-General Albert, of Constantinople, transmits, under date of July 1, 1896, the following information about the cultivation of tobacco in Turkey, furnished him by Mr. A. H. Cumberbatch, an English dealer in leaf tobacco:

A sunny district, protected from wind, is preferable for a tobacco plantation. The slope of a hill toward the west is preferred. The seed is sown during the months of February and March. The older the seed is, provided it is kept free from damp, the better the production will be. When the seed is sown, the temperature is 4° to 5° C. After the seed has been sown, sheep manure in powder is spread over it in small quantities to protect the young plants from frost. They are covered over with mats supported on stakes. When the plants are 15 to 20 centimeters (5.9 to 7.9 inches) high, they are pricked out and transplanted half a yard distant one from the other in a field free from stones, which has previously been plowed at least six times and well manured with sheep's dung. After transplanting, the plants are watered only the first and second day.

Imports of American Cotton into Spain.—Under date of July 5, 1896, Consul Harmony, of Corunna, reports as follows:

Three hundred and ninety-six tons of cotton were imported into Corunna in 1895; directly from the United States, 229 tons, and 167 tons via England. The price of cotton imported directly was 1,339.80 pesetas ($258.58) per ton, less 18 per cent=$212.04; and the price of cotton imported via England was 1,370.25 pesetas ($264.45) per ton, less 18 per cent=$216.85. The duties on cotton imported directly were 15.22 pesetas ($2.93) per ton, less 18 per cent=$2.41; and the duties on cotton imported via England were 40.60 pesetas ($7.83) per ton, less 18 per cent=$6.42. Therefore, the value and duties per ton imported directly from the United States amounted to $214.45 and the value and duties per ton imported via England amounted to $223.27—a difference against importation via England of $8.82 per ton. Importers are obliged, for want of a direct line of steamers, to import via England.

Population of Italy.—Consul-General Jones writes from Rome July 29, 1896:

When the first census was taken, December 31, 1861, the population of Italy, including Venetia and the province of Rome, amounted to 25,000,000. Ten years later (December 31, 1871), the population of united Italy amounted to 26,801,154. December 31, 1881, it had increased to 28,456,628. In 1891, it reached 30,118,102, and on December 31, 1895, it amounted to 31,684,267. The births have exceeded the deaths in the following ratio: In 1882, 9.6; 1885, 11.7; 1890, 12.8; 1894, 10.6.

The most recent statistics given to the public show that in 1894 there were

231,581 marriages, 1,102,935 births, 776,372 deaths, and 46,256 stillbirths. There has been a falling off in marriages during the last five years in comparison with the eight preceding years. In 1894, the rate of births per 1,000 inhabitants was 35.9. The mean rate for the period 1882–1890 was 27.96. The death rate per 1,000 inhabitants was 27.14 for the period 1882–1890, 26.45 in 1892, 25.44 in 1893, and 25.27 in 1894. The number of stillbirths has increased; the percentage in 1894 was 5.09 per 100 births in the province of Rome, but only 2.8 per cent in Calabria.

Telegraphing Without a Wire.—Consul Kirk, of Copenhagen, writes, July 24, 1896:

Inclosed is a description of a new electric telegraph which has appeared in the Danish papers. The extract is taken from the Danish Export Review, a publication issued monthly in English.

A DANISH INVENTION—AN ELECTRIC TELEGRAPH WITHOUT ANY LINE.

A young boatswain of the Danish navy, P. Sörensen, has constructed a telegraphic apparatus by which it is possible, without any direct line from land, to communicate with a ship at a certain anchor ground.

An electric battery is placed on the shore; one pole is in contact with the water or moist earth, while the current from the other pole, through a telegraph key and a revolving interrupter is conducted to a cable, which is laid out to the anchor ground and placed round the latter in a coil with a diameter of 1,000 to 1,200 feet.

On board the ship, which is situated at the anchor ground or a little outside the coil, there is a small solenoid with which a telephone is connected.

When you give some communication from land through the telegraph key, a bell sounds on board the ship. They go to the telephone and get the intelligence you give, by means of longer or shorter signals, based, for instance, on Morse's alphabet. The apparatus may also be constructed in such a way that they will be able to answer you from the ship. Nay, the inventor thinks he will succeed in getting so far that you can simply speak to one another as in a common telephone.

Mr. Sörensen carried on his experiments for two years before he reached a satisfactory result. Now, the Home Department has permitted him to establish such a telegraph between the lifeboat station at Tyborön and the anchor ground of the steamship *Vestkysten*, so that people on land may always be in communication with the ship. The expense in connection with this undertaking will be about 3,000 kroner.

The Home Department, however, wanting to be fully satisfied that the ship may always know when you commence telegraphing from land, has given orders to construct the apparatus in such a way that an electric arc lamp is automatically lighted on the shore opposite to the anchor ground at the same time as you commence telegraphing. It is to be raised, automatically, too, to the top of a pole and throw its light over the ship.

Two vessels at sea will also be able to telegraph to one another when they both have a solenoid on board. The distance in which they will be able to do so depends on the length of the wire and the power of the electric current. Flag signals between men-of-war in time of war may easily be discovered by an enemy—it is now not necessary to use them.

Foreigners have in vain spent large sums of money to reach the result which has now been attained by this energetic and clever boatswain, who is essentially a self-taught man.

New Law Relative to Alcohol in Belgium.—Consul Roosevelt, of Brussels, informs the Department, under date of July 21, 1896, that he has transmitted a printed copy of the Belgian law relative to the manufacture and importation of alcohol, approved by the King April 15, 1896. He adds: I inclose herewith translation of chapter 1, articles 1 and 2, of said law relating to the importation of alcohol into Belgium from foreign countries. The translation is as follows:

CHAPTER 1.—FOREIGN SPIRITS—BASIS AND RATE OF DUTY.

ARTICLE 1.

SECTION 1. Alcoholic liquors distilled in foreign countries are subjected, in proportion to the quantity imported, to the following duties per hectoliter (26.417 gallons):

Spirits of all kinds:	Francs.
In barrels, at 50° or less of the Gay-Lussoc alcoholometer at 15° C. thermometer	100=$19.30
In barrels, for each degree above 50°	2= .386
In bottles, without distinction of degree	200= 38.60
Liquors, without distinction of degree	200= 38.60
Other alcoholic liquors	134= 25.862

SEC. 2 Are considered as liquors, all spirits having undergone any preparation whatever; however, prepared spirits, other than preparations of absinthe, imported otherwise than in bottles, of which the real alcoholic strength is not more than 2° above the apparent alcoholic strength, may be admitted under the head of "spirits of all kinds in barrels," on the condition that the importer declares, besides the apparent degree, the real degree, which will serve as basis to calculate the duties.

SEC. 3. Methylene and methylic alcohol, amylic alcohol, as well as the homologous alcohols, are assimilated with "other alcoholic liquors."

SEC. 4. The duties on "spirits of all kinds" in barrels are calculated per degree and per tenths of a degree; fractions less than one-tenth of a degree are omitted.

ARTICLE 2.

The spirits designated in section 3 of article 1 may be admitted with total or partial exemption of duties, according to condition, to be determined by the Minister of Finance, when they are destined exclusively for industrial uses.

Reduction of Mexican Duty on Corn.—Under date of July 30, 1896, Consul-General Crittenden, of Mexico, reports:

I had the honor to wire you this morning as follows: "For August, the import duty on corn into Mexico is made $1 per carga of 300 pounds, a reduction of 40 cents on the carga." This reduction is caused by the poor outlook for a crop, due to the lateness of the rainy season. The regular duty is $1.40 per carga of 300 pounds. Besides, I understand it is the intention of the railroads in the United States to make a reduction of the freight rate to the Mexican border, thus enabling American corn to be landed in Mexico and sell at the same rate that Mexican corn is now selling

throughout the Republic. It is estimated that Mexico will take about one thousand cars of our corn under this reduction. I inclose copy of the order:

DECREE REDUCING DUTY ON CORN.

With a view of preventing the threatened scarcity of corn, the Treasury Department has issued the following decree:

ARTICLE 1. Corn imported into the Republic during the month of August next shall pay for import duties the sum of 70 cents per 100 kilograms.*

ART. 2. The above reduction does not affect the concession granted on May 21 last to the States of Campeachy and Yucatan, whereby a rebate of 50 per cent in the import duties on corn for local consumption in those States was decreed.

Decline of British Trade with East Africa.—Consul Dickinson, of Nottingham, under date of August 8, 1896, sends the following from the London Times:

Mr. Cave, our consul at Zanzibar, has some interesting observations in his last report on the decline of British trade with East Africa. The imports through Zanzibar last year were of the declared value of £1,293,646, British India being first among the importing countries, rice, specie, and piece goods being the chief goods from India. Among European countries Great Britain takes the first place; but her imports show a decline, chiefly in piece goods and hardware, which Mr. Cave attributes wholly to foreign competition. Of all the imports to Zanzibar, that of piece goods is by far the most important. Last year, it was twice as much as any other article, and, while the imports of piece goods from the other importing countries increased last year, that from Great Britain declined by a fourth. The so-called "gray cloth," a kind of unbleached cloth which is in great demand in the interior of Africa and in some parts forms the only currency, is the most important class of piece goods imported; and America has the best part of this trade, not only because it was first in the field with it, but because it is of better quality than Manchester productions of the same price, is free from sizing, and does not shrink when washed. The American cloth, also, is stouter and can be relied on for uniform weight, while consignments from other countries vary both in weight and width. In some parts, especially on the Benadir coast, the American cloth, though costing more than the British, practically monopolizes the market. In spite of this, however, Mr. Cave thinks that if British manufacturers would pay more particular attention to the uniformity of weight, measurement, texture, and ingredients in the goods they send to Africa, and if British productions were pushed in British East Africa and Uganda, they would regain the position which they have been deprived of by foreign competition. Printed handkerchiefs called "kangas," measuring about 50 by 72 inches, which are the principal garments of the native women, were at one time imported wholly from Manchester and Glasgow, but now they are supplied from Holland by German firms. The cause of this seems to be cheaper printing in Holland. Among other important articles the import of which from Great Britain has declined, Mr. Cave mentions brass wire, which is largely used for barter and which at one time was exclusively obtained from Great Britain, but now goes from Hamburg and is believed to be made in France. Common mottled bar soap of British manufacture is being driven out by German soap, owing, it is said, to the latter being malleable, while English soap is liable to flake off and break. English crockery and glassware also are being superseded by goods of continental manufacture, especially in regard to the cheaper varieties; and the cement trade has gone largely to Germany and Belgium. The greatest part of the

*1 kilogram=2.2046 pounds.

galvanized iron roofing—a trade which has increased greatly of late—is imported from continental countries because of its cheapness; English iron nails have been superseded by wire nails from Belgium; bar iron is now imported from Sweden and Belgium, and English tools have been superseded by cheaper ones made on the Continent. The demand, the consul says, is, above all things, for a cheap article; "indeed, there are in all probability few markets in the world which so consistently import the cheapest obtainable class of goods as that of Zanzibar, and unless the British manufacturer will come down from his pedestal and produce an article, as his foreign competitors do, that will meet the practical requirements of the buyers, it is likely that a trade which might be fairly profitable to him will drop more and more into other hands. There is another point, also, apart from any question of price, in which British trade suffers by comparison with our foreign rivals, and that is, the enterprise and care which are necessary to obtain a hold on this market, and, when once obtained, to keep it." On this last point, Mr. Cave mentions the absence of samples, price lists, or other forms of advertisement by British manufacturers, and the notion that goods sent out from England find a ready sale, whereas "the native is a very particular person, indeed; he wants his coil of brass wire to be in one complete length and so many coils in a case; there must be exactly the same number of yards in every piece of cloth; each bar of soap should be cut into an equal number of square pieces. These details may appear to be unworthy of consideration, but it is just a careful observation of some of these small points that has helped foreign trade to succeed where British trade has failed."

Harbor Improvements at Hiogo.—Consul Connelly, of Osaka and Hiogo, Japan, sends the following report, dated June 18, 1896:

With reference to the insufficiency of the imperial customs department at this port as to storage and lighterage facilities, I have the honor to transmit herewith clippings taken from the Kobé Chronicle, of even date with this report, relating to improvements intended to be made in the customs plant and the harbor of Hiogo (Kobé), for which ample appropriations were made by the Imperial Diet at its last session at Tokyo:

THE KOBÉ CUSTOMS EXTENSION.

A notice of the Hiogo prefectural government appears in the Yushin Nippo, inviting tenders for the work of extending the Kobé custom-house. Tenders will be received up to the 30th instant, when they are to be opened by Mr. Akiyama, secretary of Hiogo prefecture.

THE HARBOR-IMPROVEMENT SCHEME.

In reference to the plan of the proposed extension of the Kobé custom-house accommodation, the Kwansai Shogyo Nippo observes that the sea between the second (or western) hatoba and the American hatoba along the bund is to be reclaimed to a width of 20 ken, or 40 yards, making in all over 5,400 tsubo. Of this area, some 4,070 tsubo are to be occupied by sheds and warehouses. The existing American hatoba is to be lengthened 100 ken (200 yards). From its further end, a breakwater 90 ken (180 yards) in length, extending in a southwest direction, is to be constructed, and at the second hatoba, also, a breakwater 36 ken (72 yards) long will be constructed. The breakwater will extend practically the whole length of the native bund and will inclose a surface of water about 13,700 tsubo in extent, the depth being about 12 feet at the low tide, making it one big camber. A waterway will be made through the western hatoba, in order that communication may be had between the existing camber and the new camber.

Exports of Silk from Canton.—Consul Seymour writes from Canton, June 6, 1896:

The exports of raw silk and waste silk from Canton, China, for the year ended May 31, 1896, amounted to—

	Bales.
Europe	19,748
United States	9,387
India	3,488
Total	32,623

Average weight per bale, 107 pounds.

The exports of waste silk to Europe, India, and the United States amounted to—

	Bales.
Europe	19,531
India	7,153
United States	1,000
Total	27,684

The average weight was 133⅓ pounds per bale of 1 picul of 100 catties (catty=1⅓ pounds).

Exports of pierced cocoons in barrels of 75 catties (100 pounds) amounted to 3,737 barrels to Europe; none to the United States or India.

As compared with Canton's exports of raw silk in the previous two years, we see in 1894–95 there were sent—

	Bales
To Europe	16,624
To United States	8,978
To India	3,218
Total	28,820

In 1893–94, there were sent—

	Bales.
To Europe	18,620
To United States	4,532
To India	4,323
Total	27,475

The raw-silk trade in China and Japan is much depressed by absence of large orders from Europe and America during the past half year.

Madagascar a French Colony.—Under date of August 10, 1896, Mr. Henry Vignaud, secretary of embassy at Paris, reports to the Department of State that the law declaring Madagascar and its depending islands a French colony was promulgated on August 6 and published in the Journal Officiel on the 8th. From and after the promulgation of this law at Madagascar, French products imported direct from France or from French colonies will be allowed free entry, while, until the adoption of definitive customs regulations, foreign goods must pay a duty of 10 per cent (the old duty charged

on goods entering Madagascar). Mr. Vignaud states that it would seem that the old treaties are to remain in force, temporarily at least. Another decree was published July 27, establishing regulations concerning the seeking and working of mines in Madagascar. Mr. Vignaud does not give the text of these regulations, because of their length and complicated provisions, but says that no discrimination is made therein between French and foreign prospectors and miners. The validity of former concessions to foreigners is being considered by the Minister of Colonies, and, although nothing official has been announced, the French papers remark that all old genuine concessions will be confirmed.

The Anglo-Sicilian Sulphur Trust.—Vice-Consul Ritter writes from Catania, August 1, 1896:

The Anglo-Sicilian Sulphur Trust, formed by Italian, French, and English capitalists, has been perfected.* A firm under the style of Anglo-Sicilian Sulphur Company, Limited, has been established in London and has appointed as agent for Sicily, Mr. Luigi Lofio, of Messina. The capital of the company is £1,000,000, whereof £700,000 are to be paid in at once. Having fulfilled all the requirements of Italian law, the company entered into operation to-day.

The completion of the trust was very uncertain until a few days ago, because great difficulties had arisen, the Italian Parliament having refused to grant to the new company the required exemption from the heavy register and income taxes, which would have amounted to over $500,000. But to avoid the collapse of the trust, an agreement, approved by royal decree, was made between the Italian Government and the Anglo-Sicilian Company, that the latter, for subscription (abbonamento) to all register and income taxes, has to pay 1 lira per ton of the sulphur exported from Sicily.

So far, it is not known whether the Anglo-Sicilian will itself do the export business or whether it will only control the prices and sell the sulphur to export houses.

The immediate consequence of the definitive formation of the trust has been another sharp advance of prices—say 8 to 10 per cent—during the last three days, and the tendency is for a further rise, especially for delivery after the 1st of October next, from which date the Italian export duty of 11 lire per ton of 1,000 kilograms has been abolished by a recent law.

The United States consume about one-third of the Sicilian production of sulphur—say 100,000 to 110,000 tons per year—and the higher prices for the crude brimstone will therefore cause great injury to the acid makers and the other manufacturers in the United States.

Under date of August 24, 1896, Consul Caughy, of Messina, cables to the Department: Italian Government from to-day exacts 1 lira (19.3 cents

*See CONSULAR REPORTS No. 190 (July, 1896), p. 489, and No. 191 (August, 1896), p. 773.

in United States currency) tax per ton on sulphur, besides the present export duty, 11 lire.* Another cablegram from Consul Caughy dated September 3, says: "Additional lira export tax suspended, except for syndicate, until October 1."

Electrical Railways in Europe.—Vice-Consul J. F. Monaghan writes from Chemnitz, July 11, 1896:

The number of electrical railways, street and other, went up in Europe during 1895 from 70 to 111; length of lines, from 700 kilometers to 902 kilometers (1 kilometer=3,250 feet); power, from 18,150 to 25,095; the number of cars (wagons), from 1,236 to 1,747. Germany, with 406 kilometers, leads the list. The following table shows the ratio of the different countries:

Country.	Kilometers.	Power.	Cars.
Germany	406.4	7,194	857
France	132	4,490	225
England	94.3	4,243	143
Austria-Hungary	71	1,949	157
Switzerland	47	1,559	86
Italy	39 7	1,890	84
Spain	29	600	26
Belgium	25	1,120	48
Ireland	13	440	25
Russia	10	540	32
Servia	10	200	11
Norway and Sweden	7.5	225	15
Bosnia	5.6	75	6
Roumania	5.5	140	15
Holland	3.2	320	14
Portugal	2.8	110	3

No Canning of Horse Meat at Antwerp.—Consul Johnson, of Antwerp, writes under date of August 11, 1896:

Referring to the Department's instruction of July 7 last, in which was inclosed a copy of a report from our consul at Rheims and a newspaper article stating "that there exists in Antwerp a large and important factory where the invalid omnibus horses of London are converted into canned beef and sold under American labels,"† I beg to say that the most thorough investigation fails to show the existence in this city or consular district of any such factory. No horse meat is canned in this district, according to the positive statement of the city authorities; of Mr. Robert Brand, representative of the Armours; * * * and of several other persons. Mr. Brand, who is an American and has lived here for twenty years, states that he is absolutely certain

*It will be observed that Vice-Consul Ritter states that the export duty of 11 lire will be abolished on the 1st of October.

†See CONSULAR REPORTS No. 190 (July, 1896), p. 588.

that horse meat is not canned here; that if it were, he would be sure to know of it, as he knows personally and sells to all the retailers in this city, besides being familiar with the trade throughout this district through his agents and customers; and that if such a factory did exist and used American labels, he would heartily assist in finding the factory and stopping the illegal use of the labels, on account of the competition from which his own business would suffer.

Old, broken-down, worn-out horses do come to this port from England in considerable quantities. They are taken to the public abattoir, examined, and, if found safe for food, are killed and sold as fresh meat. The meat is also used by some of the butchers for making sausage.

Exports from Goree-Dakar.—Consul Strickland, in transmitting his accounts relative to the exports of his consular district says:

There have been no exports declared at this consulate for the United States during the year ended June 30, 1896. All the produce of the colony—gums, hides, coffee, ivory, india rubber, oleaginous nuts, etc.—have been sent to Europe in payment for manufactured goods exported from Europe. Undoubtedly, large quantities of these products, either in a raw or manufactured condition, are reexported to the United States, for which, in the main, American gold has been paid, whereas, with direct trade, they could be paid for in American manufactures.

Electric Plants in Peru.—Mr. Alfred Solf, United States consular agent at Chiclayo, under date of July 6, 1896, reports that an electric plant is wanted at that place, and perhaps at other places in the neighborhood, and he desires to hear from American manufacturers, so that he may supply them with full particulars of the plant required.

Consular Reports Transmitted to Other Departments.—The following reports from consular officers (originals or copies) were transmitted during the month of August to other Departments for publication or for other action thereon:

Consular officer reporting.	Date.	Subject.	Department to which referred.
W. E. Hunt, Hongkong	June 24, 1896	Issuance of letters patent	Department of the Interior.
E. Schneegans, Saigon	June 27, 1896	Rice market	Department of Agriculture.
Do	July 11, 1896	....do	Do.
A. D. Dickinson, Nottingham	Aug. 10, 1896	Condition of British crops	Do.

FOREIGN REPORTS AND PUBLICATIONS.

British Trade Returns.—The accounts of trade and navigation of the United Kingdom for the month of June and for the six months ended June 30, 1895 and 1896, make the following showing of British imports and exports:

Imports.

Articles.	1895.	1896.	Increase.	Decrease.
Month of June.				
Animals, living, for food	$4,113,858	$4,721,864	$608,006	
Articles of food and drink:				
Duty free	61,288,817	60,989,003		$299,814
Dutiable	7,551,000	7,814,840	263,840	
Tobacco	942,374	1,123,950	181,576	
Metals	8,492,849	8,155,202		337,647
Chemicals, dyes, and tannics	2,195,573	2,418,715	223,142	
Oils	3,072,894	2,990,347		82,547
Raw materials:				
For textiles	25,399,936	22,607,675		2,792,261
For other industries	17,888,272	21,892,317	4,004,045	
Manufactured articles	27,739,528	32,195,455	4,455,927	
Miscellaneous goods	5,903,517	6,066,452	162,935	
Parcel post	342,425	449,735	107,310	
Total	164,931,043	171,425,555	6,494,512	
Six months ended June 30.				
Animals, living, for food	18,789,140	26,200,831	7,411,691	
Articles of food and drink:				
Duty free	326,245,474	338,603,629	12,358,826	
Dutiable	54,042,926	52,998,186		1,044,740
Tobacco	6,476,480	8,791,306	2,314,826	
Metals	43,565,478	48,947,926	5,382,448	
Chemicals, dyes, and tannics	17,916,373	20,313,187	2,396,814	
Oils	18,501,515	19,495,880	994,365	
Raw materials:				
For textiles	206,541,148	202,358,626		4,182,522
For other industries	86,872,230	100,106,309	13,234,079	
Manufactured articles	176,874,321	197,771,776	20,897,455	
Miscellaneous goods	33,248,893	35,474,191	2,225,298	
Parcel post	2,554,036	2,587,658	33,602	
Total	991,628,034	1,053,649,505	62,021,471	

Exports.

Articles.	1895.	1896.	Increase.	Decrease.
Month of June.				
Animals, living, for food	$391,170	$414,067	$32,897	
Articles of food and drink	4,235,196	4,575,234	340,038	
Raw materials	7,828,405	7,806,639		$21,766

Exports—Continued.

Articles.	1895.	1896.	Increase.	Decrease.
Month of June—Continued.				
Manufactured and partly manufactured articles:				
Textiles and yarns	$35,586,233	$42,958,644	$7,372,411	
Metals and metal goods	11,555,349	14,763,668	3,208,319	
Machinery and millwork	6,415,515	7,640,540	1,225,025	
Apparel and personal effects	3,166,053	4,007,574	841,521	
Chemicals, chemical products, and medicinal preparations	3,264,371	3,314,899	50,528	
All other	13,733,448	13,804,405	70,957	
Total manufactures	73,720,969	86,489,730	12,768,761	
Parcel post	439,546	614,254	174,708	
Total British exports	86,615,286	99,899,924	13,284,638	
Foreign products	25,623,251	22,719,237		$2,904,014
Total exports	112,238,537	122,619,161	10,380,624	
Six months ended June 30.				
Animals, living, for food	1,623,728	1,941,772	318,044	
Articles of food and drink	22,227,331	94,129,834	1,902,503	
Raw materials	41,534,214	41,912,626	378,412	
Manufactured and partly manufactured articles:				
Textiles and yarns	234,629,541	258,781,600	24,152,160	
Metals and metal goods	63,950,004	80,461,213	16,511,209	
Machinery and millwork	34,741,961	40,372,443	5,530,472	
Apparel and personal effects	19,836,969	24,582,511	4,745,542	
Chemicals, chemical products, and medicinal preparations	20,292,851	21,659,114	1,366,263	
All other	74,694,209	81,491,283	6,797,074	
Total manufactures	448,145,535	507,348,164	59,202,629	
Parcel post	2,837,024	3,735,535	898,511	
Total British exports	516,367,832	579,067,931	62,700,099	
Foreign products	147,105,768	145,682,147		1,423,621
Total exports	663,473,600	724,750,078	61,276,478	

Résumé for the six months.

Description.	1895.	1896.	Increase.
Imports	$991,628,034	$1,053,649,505	$62,021,471
Exports	663,473,600	724,750,078	
Excess of imports	328,154,434	328,899,427	

The accounts of trade and navigation of the United Kingdom for the month of July and for the seven months ended July 31, 1895 and 1896, make the following showing of imports and exports:

Imports.

Articles.	1895.	1896.	Increase.	Decrease.
Month of July.				
Animals, living, for food	$4,104,490	$4,718,190	$613,700	
Articles of food and drink:				
Duty free	63,502,575	57,721,986		$5,780,589
Dutiable	9,562,143	10,150,620	588,477	
Tobacco	1,668,347	1,977,961	309,614	
Metals	8,588,738	8,859,147	270,409	
Chemicals, dyes, and tannics	2,595,607	2,601,218	5,618	
Oils	3,615,394	3,494,911		120,483
Raw materials:				
For textiles	17,177,909	13,608,708		3,569,201
For other industries	23,350,752	24,846,651	1,495,899	
Manufactured articles	30,860,108	33,335,983	2,475,875	
Miscellaneous goods	5,370,794	5,667,965	297,171	
Parcel post	387,645	323,608		64,037
Total	170,784,502	167,306,948		3,477,554
Seven months ended July 31.				
Animals, living, for food	22,893,654	30,920,121	8,026,467	
Articles of food and drink:				
Dutiable	389,599,559	396,185,688	6,586,129	
Duty free	63,380,221	62,790,694		589,527
Tobacco	8,147,246	10,972,772	2,825,526	
Metals	52,154,036	57,807,048	5,643,012	
Chemicals, dyes, and tannics	20,511,893	22,914,398	2,402,505	
Oils	21,922,045	22,990,585	1,068,540	
Raw materials:				
For textiles	223,709,294	215,967,279		7,742,015
For other industries	110,222,880	124,952,681	14,729,801	
Manufactured articles	207,734,411	231,007,759	23,273,348	
Miscellaneous goods	38,713,327	41,142,147	2,428,820	
Parcel post	2,941,502	2,911,391		30,111
Total	1,161,930,068	1,220,562,563	58,622,495	

Exports.

Articles.	1895.	1896.	Increase.	Decrease.
Month of July.				
Animals, living	$323,788	$321,779		$2,009
Articles of food and drink	4,772,646	4,749,829		22,817
Raw materials	8,807,830	7,550,767		1,257,063
Manufactured and partly manufactured articles:				
Yarns and textiles	45,918,969	47,217,651	$1,298,682	
Metal goods	12,483,324	14,422,999	1,939,675	
Machinery and millwork	6,488,313	7,555,555	1,067,242	
Apparel and personal effects	4,210,847	4,565,481	354,634	
Chemicals, chemical products, and medicinal preparations	3,424,117	3,026,735		397,382
All other	13,069,390	13,796,334	726,944	
Total manufactures	85,594,960	90,584,755	4,989,795	

Exports—Continued.

Articles.	1895.	1896.	Increase.	Decrease.
Month of July—Continued.				
Parcel post	$543,235	$597,433	$54,198	
Total British goods	100,042,459	103,804,563	3,762,104	
Foreign products	23,307,902	20,800,622		$2,507,280
Total exports	123,350,361	124,605,185	1,254,824	
Seven months ended July 31.				
Animals, living	1,949,729	2,263,551	313,822	
Articles of food and drink	27,002,076	28,829,663	1,829,587	
Raw materials	50,356,913	49,403,296		953,617
Manufactured and partly manufactured articles:				
Yarns and textiles	280,546,516	305,992,980	25,446,464	
Metal goods	76,433,362	94,884,212	18,450,850	
Machinery and millwork	41,233,102	47,928,003	6,694,901	
Apparel and personal effects	24,047,860	29,147,992	5,100,132	
Chemicals, chemical products, and medicinal preparations	23,706,471	24,685,909	979,438	
All other	87,755,785	95,415,929	7,660,144	
Total manufactures	533,723,096	598,055,025	64,331,929	
Parcel post	3,380,478	4,333,115	952,637	
Total British goods	616,410,292	682,884,650	66,474,358	
Foreign products	170,413,670	166,422,769		3,990,901
Total exports	786,823,962	849,307,419	62,383,457	

Résumé for the seven months.

Description.	1895.	1896.	Increase.
Imports	$1,161,930,068	$1,220,562,563	$58,632,495
Exports	786,823,962	849,307,419	62,383,457
Excess of imports	375,106,106	371,255,144	

A New Process of Treating Ramie.—The London Times of August 10, 1896, says:

The remarkable development of the rhea (ramie) fiber throws for the moment all tariff differences between Bombay and Manchester into the shade. The Indian Government has long been aware that in this widely spread variety of the nettle family its provinces possess a source of unused wealth. In 1869, it offered a reward of £5,000 for the invention of a machine or process which should separate the delicate fiber from the bark at a cost consistent with the requirements of commerce. An offer of 50,000 rupees was renewed in 1877. Various machines were submitted under these inducements, but they failed in regard to the essential element of cheapness, and after many trials the offers were withdrawn. They effectually attracted, however, the attention of experts in Great Britain, Europe, and America. Rhea became recognized as one of the most valuable fibers known to the ancient or modern world. Its use in Egypt, India, and China dates from before the dawn of history. Rhea cloth is unrolled from the mummies of the Nile and unearthed in the burial mounds of Assam. The nets and lines spun from it had, for strength, fineness, and durability, no rivals among the

fishermen of Bengal and the Malay Archipelago. As "China grass," it won its way about the beginning of this century into European commerce.

The difficulty is to separate the strong, silky fibers of the bark from the outer cuticle and the tenacious gums in which they lie imbedded. In the past, when labor was of little account, the wives or daughters of the husbandmen and fishing communities scraped and washed small quantities of the bark till, by the persistent toil of many days, each family produced a few handfuls of the much-prized fiber. But the cost of this manual process proved an insuperable difficulty in the adoption of rhea for modern textile manufactures. Dr. Royle, as industrial adviser to the India Office, showed that the rhea fibers "are exceeded by none in fineness, excel all others in strength, and may be fitly compared to the trunk of an elephant, which can pick up a needle or root up a tree." He declared that, if the difficulty of separating the fiber can be overcome, "the benefits to India and the world will be incalculable." It is this problem that the chemists and machinists of Europe and America have, during the past thirty years, been endeavoring to solve. France and Germany at once entered the field with factories for the extraction of the fiber. They worked it up into many forms, from ropes and sail canvas to plushes and dress pieces resembling silk goods in appearance. They failed, however, to produce a filasse, or clean fiber, which should be at once cheap and serviceable. No machine or merely mechanical operation eliminated the resins with a perfection which yielded fine yarns, except at a cost prohibitive of their general use.

The chemists seemed for a time to be more successful. They produced by means of various reagents a filasse which was at once cheap and apparently sound. Beautiful fabrics were woven on the Continent, and the inventors laid out a large capital, in the belief that they had solved the problem. But by the time the fabrics came into the hands of the consumers, indeed often before they passed from the shops of the retail dealers, it was found that the chemicals had injured the fiber, and the goods were often returned to the makers. Process after process and machine after machine failed to extract a rhea fiber which should be both durable and cheap.

The honor of solving the problem has fallen to an English chemist, born, we believe, in India. Mr. Gomess, after many experiments, elaborated a process which the Indian Government is at length able to pronounce a complete success. "The difficulties which previously existed," says the official memorandum lately issued by its inspector-general of forests, "in regard to the extraction of the valuable textile fiber from the bark of the rhea plants have been entirely overcome by what is known as the Gomess process, and a large demand has sprung up for ribbons of dried bark, with every probability of its increasing to enormous proportions." After referring to the operations of the Rhea Fiber Treatment Company in London and its dependent associations now being established throughout India, Europe, and America, the official memorandum proceeds to indicate how the production of the fiber may be increased in practically unlimited quantities to meet the demand. "These facts seem to point to the conclusion that we are on the dawn of an industry which even promises to rival jute cultivation." The inspector-general then draws out a scheme for aiding the cultivators by official information as to the areas most suitable for the growth of the plant and the varieties best adapted to each locality, and by Government experiments as to the best modes of stripping, drying, and baling the bark. The subject, he insists, "becomes all the more important and urgent as reports reach us from the French colonies of considerable activity in the rhea-fiber trade, and as it would not be convenient to be outstripped by them."

The Gomess process adopts zincate of soda for the elimination of the resins, and effects it without the slightest injury to the fiber. After the "ribbons" or strips of bark have been freed from dirt, they are placed in weak acid baths for a night. Next morning they are passed through a mild alkaline bath, and then boiled in weak solutions of caustic soda, to which zinc has been added. When washed and dried by the usual mechanical means, the fibers emerge as a long, silky filasse, entirely free from the cuticle and resinous gums in which they were imbedded, clean, white, and ready for the comb of the spinner. They take the most beautiful dyes and can be worked into every variety of fabric, from gorgeous velvets to cheap drills

and delicate laces. The combined lightness and toughness of the fiber render it peculiarly suitable for tents and ship canvas. Three-fifths more cloth of equal strength can be made from rhea than from the same weight of linen. That is to say, 1,000 yards of the rhea canvas weigh only as much as 600 yards of linen. Its durability and resisting power to strain are also much greater. The Government of India is taking effectual steps for the rapid extension of the cultivation. If its forecast be correct, we may congratulate ourselves that what promises to become a great new industry has been rendered possible by the science of an English chemist and has been practically inaugurated by an English company.

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Full directions for binding the Consular Reports are given in No. 131, page 663.

VALUES OF FOREIGN COINS.

The following statements show the valuation of foreign coins, as given by the Director of the United States Mint and published by the Secretary of the Treasury, in compliance with the first section of the act of March 3, 1873, viz: "That the value of foreign coins, as expressed in the money of account of the United States, shall be that of the pure metal of such coin of standard value," and that "the value of the standard coins in circulation of the various nations of the world shall be estimated annually by the Director of the Mint, and be proclaimed on the 1st day of January by the Secretary of the Treasury."

In compliance with the foregoing provisions of law, annual statements were issued by the Treasury Department, beginning with that issued on January 1, 1874, and ending with that issued on January 1, 1890. Since that date, in compliance with the act of October 1, 1890, these valuation statements have been issued quarterly, beginning with the statement issued on January 1, 1891.

These estimates "are to be taken (by customs officers) in computing the value of all foreign merchandise made out in any of said currencies, imported into the United States."

The following statements, running from January 1, 1874, to April 1, 1894, have been prepared to assist in computing the proper values in American money of the trade, prices, values, wages, etc., of and in foreign countries, as given in consular and other reports. The series of years are given so that computations may be made for each year in the proper money values of such year. In hurried computations, the reductions of foreign currencies into American currency, no matter for how many years, are too often made on the bases of latest valuations. When it is taken into account that the ruble of Russia, for instance, has fluctuated from 77.17 cents in 1874 to 37.2 cents in April, 1894, such computations are wholly misleading. All computations of values, trade, wages, prices, etc., of and in the "fluctuating-currency countries" should be made in the values of their currencies in each year up to and including 1890, and in the quarterly valuations thereafter.

To meet typographical requirements, the quotations for the years 1876, 1877, 1879, 1881, and 1882 are omitted, these years being selected as showing the least fluctuations when compared with years immediately preceding and following.

To save unnecessary repetition, the estimates of valuations are divided into three classes, viz: (A) countries with fixed currencies, (B) countries with fluctuating currencies, and (C) quarterly valuations of fluctuating currencies.

A.—*Countries with fixed currencies.*

The following official (United States Treasury) valuations of foreign coins do not include "rates of exchange." It follows, therefore, that when foreign money orders are required, the post-office authorities, to save the Department from incurring loss in such transactions, add the rate of exchange to these valuations.

Countries.	Standard.	Monetary unit.	Value in terms of United States gold.	Coins.
Argentine Republic*	Gold and silver	Peso	$0.96,5	Gold—Argentine ($4.82,4) and ½ Argentine; silver—peso and divisions.
Austria-Hungary†	Gold	Crown	.20,3	Gold—20 crowns ($4.05,2) and 10 crowns.
Belgium	Gold and silver	Franc	.19,3	Gold—10 and 20 franc pieces; silver—5 francs.
Brazil	Gold	Milreis	.54,6	Gold—5, 10, and 20 milreis; silver—½, 1, and 2 milreis.
British North America (except Newfoundland).	do	Dollar	1.00	
Chile‡	Gold and silver	Peso	.91,2	Gold—escudo ($1.82,4), doubloon ($4.56,1), and condor ($9.12,8); silver—peso and divisions.
Cuba	do	do	.92,6	Gold—doubloon ($5.02,7); silver—peso.
Denmark	Gold	Crown	.26,8	Gold—10 and 20 crowns.
Egypt	do	Pound (100 piasters).	4.94,3	Gold—10, 20, 50, and 100 piasters; silver—1, 2, 10, and 20 piasters.
Finland	do	Mark	.19,3	Gold—10 and 20 marks ($1.93 and $3.85,9).
France	Gold and silver	Franc	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Germany	Gold	Mark	.23,8	Gold—5, 10, and 20 marks.
Great Britain	do	Pound sterling	4.86,6½	Gold—sovereign (pound sterling) and half sovereign.
Greece	Gold and silver	Drachma	.19,3	Gold—5, 10, 20, 50, and 100 drachmas; silver—5 drachmas.
Haiti	do	Gourde	.96,5	Silver—gourde.
Italy	do	Lira	.19,3	Gold—5, 10, 20, 50, and 100 lire; silver—5 lire.
Liberia	Gold	Dollar	1.00	
Netherlands‖	Gold and silver	Florin	.40,2	Gold—10 florins; silver—½, 1, and 2½ florins.
Newfoundland	Gold	Dollar	1.01,4	Gold—$2 ($2.02,7).
Portugal	Gold	Milreis	1.08	Gold—1, 2, 5, and 10 milreis.
Spain	Gold and silver	Peseta	.19,3	Gold—25 pesetas; silver—5 pesetas.
Sweden and Norway	Gold	Crown	.26,8	Gold—10 and 20 crowns.
Switzerland	Gold and silver	Franc	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Turkey	Gold	Piaster	.04,4	Gold—25, 50, 100, 200, and 500 piasters.
Venezuela	Gold and silver	Bolivar	.19,3	Gold—5, 10, 20, 50, and 100 bolivars; silver—5 bolivars.

* In 1874 and 1875 the gold standard prevailed in the Argentine Republic. Its currency does not appear in the statements again until 1883, when the double standard prevailed, and the peso attained a fixed value of 96.5 cents.

† On reference to the table of "fluctuating currencies," it will be seen that Austria had the silver standard up to and including the quarter ending July 1, 1892. The next quarter (October 1) inaugurated the gold standard (*see* note under table of "fluctuating currencies").

‡ The gold standard prevailed in Chile until January 1, 1890. The value of the peso has been the same under both standards.

‖ The Netherlands florin, as will be seen in the "fluctuating" table, became fixed in value (40.2 cents) in 1880.

B.—*Countries with fluctuating currencies, 1874–'90.*

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1874.	1875.	1878.	1880.	1883.	1884.
Austria-Hungary*	Silver	Florin	$0.47,6	$0.45,3	$0.45,3	$0.42,3	$0.40,1	$0.39,8
Bolivia	do	Dollar until 1880; boliviano thereafter.	.96,5	.96,5	.96,5	.83,6	.81,2	.80,6
Central America	do	Peso	.96,5	.91,8	.91,8	.83,6	.....	.....
China	Silver	Haikwan tael	1.61	1.61	.....	.....	.....	.....
Colombia	do	Peso	.96,5	.96,5	.96,5	.83,6	.81,2	.80,6
Ecuador	do	do	.96,5	.91,8	.91,8	.83,6	.81,2	.80,6
Egypt†	Gold	Pound (100 piasters).	.....	.....	4.97,4	4.97,4	4.90	4.90
India	Silver	Rupee	.45,8	.43,6	.43,6	.39,7	.38,6	.38,3
Japan	Gold	Yen	.99,7	.99,7	.99,7	.99,7	.....	.....
	Silver		.....	.....	.....	.....	.87,6	.86,9
Mexico	do	Dollar	1.04,7½	.99,8	.99,8	.90,9	.88,2	.87,5
Netherlands‡	Gold and silver	Florin	.40,5	.38,5	.38,5	.40,2	.....	.....
Peru	Silver	Sol	.92,5	.91,8	.91,8	.83,6	.81,2	.80,6
Russia	do	Ruble	.77,17	.73,4	.73,4	.66,9	.65	.64,5
Tripoli	do	Mahbub of 20 piasters.	.87,09	.82,9	.82,9	.74,8	.73,3	.72,7

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1885.	1886.	1887.	1888.	1889.	1890.
Austria-Hungary*	Silver	Florin	$0.39,3	$0.37,1	$0.35,9	$0.34,5	$0.33,6	$0.42
Bolivia	do	Dollar until 1880; boliviano thereafter.	.79,5	.75,1	.72,7	.69,9	.68	.85
Central America	do	Peso	.....	.....	.....	.69,9	.68	.85
Colombia	do	do	.79,5	.75,1	.72,7	.69,9	.68	.85
Ecuador	do	do	.79,5	.75,1	.72,7	.69,9	.68	.85
Egypt†	Gold	Pound (100 piasters).	4.90	4.90	4.94,3	4.94,3	4.94,3	4.93,3
India	Silver	Rupee	.37,8	.35,7	.34,6	.33,2	.32,3	.40,4
Japan	Gold	Yen	.....	.....	.99,7	.99,7	.99,7	.99,7
	Silver		.85,8	.81	.78,4	.75,3	.73,4	.91,7
Mexico	do	Dollar	.86,4	.81,6	.79	.75,9	.73,9	.92,3
Peru	Silver	Sol	.79,5	.75,1	.72,7	.69,9	.68	.85
Russia	do	Ruble	.63,6	.60,1	.58,2	.55,9	.54,4	.68
Tripoli	do	Mahbub of 20 piasters.	.71,7	.67,7	.65,6	.63	.61,4	.76,7

* The silver standard prevailed in Austria-Hungary up to 1892. The law of August 2 of that year (*see* CONSULAR REPORTS, No. 147, p. 623) established the gold standard.

† The Egyptian pound became fixed in value at $4.94,3 in 1887.

‡ The Netherlands florin fluctuated up to the year 1880, when it became fixed at 40.2 cents.

C.—*Quarterly valuations of fluctuating currencies.*

Countries.	Monetary unit.	1893.				1894.			
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.	April 1.	July 1.	Oct. 1.
Bolivia	Silver boliviano.	$0.61,3	$0.61	$0.60,4	$0.53,1	$0.51,6	$0.46,5	$0.45,7	$0.46,4
Central America	Silver peso	.61,3	.61	.60,4	.53,1	.51,6	.46,5	.45,7	.46,4
China*	Shanghai tael	.90,6	.90,1	.89,2	.78,4	.76,2	.68,6	.67,6	.68,5
	Haikwan tael	1.01	1.00,4	.99,4	.87,4	.84,9	.76,5	.75,3	.76,3
	Tientsin tael								.72,7
	Chefoo tael								.71,7
Colombia	Silver peso	.61,3	.61	.60,4	.53,1	.51,6	.46,5	.45,7	.46,4
Ecuador	do	.61,3	.61	.60,4	.53,1	.51,6	.46,5	.45,7	.46,4
India	Silver rupee	.29,2	.29	.28,7	.25,2	.24,5	.22,1	.21,7	.22
Japan†	Silver yen	.66,1	.65,8	.65,1	.57,3	.55,6	.50,1	.49,3	.50
Mexico	Silver dollar	.66,6	.66,2	.65,6	.57,7	.56	.50,5	.49,7	.50,4
Peru	Silver sol	.61,3	.61	.60,4	.53,1				
Russia‡	Silver ruble	.49,1	.48,8	.48,3	.42,5	.51,6	.46,5	.45,7	.46,4
Tripoli	Silver mahbub	.55,3	.55	.54,5	.47,9	.41,3	.37,2	.36,6	.37,1
Venezuela ⸸	Silver bolivar					.46,5	.41,9	.41,3	.41,8

Countries.	Monetary unit.	1895.				1896.			
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.	April 1.	July 1.	Oct. 1.
Bolivia	Silver boliviano	$0.45,5	$0.44,1	$0.48,6	.48,6	$0.49,1	$0.49,3	$0.49,7	$0.49
Central America	Silver peso	.45,5	.44,1	.48,6	.48,6	.49,1	.49,3	.49,7	.49
China*	Amoy tael								.79,3
	Canton tael								.79
	Chefoo tael	.70,4	.68,3	.75,1	.75,2	.75,9	.76,3	.76,9	.75,8
	Chinkiang tael								.77,4
	Fuchau tael								.73,3
	Haikwan tael	.74,9	.75,6	.80	.80,0	.80,8	.81,2	.81,9	.80,6
	Hankow tael								.74,2
	Ningpo tael								.76,2
	Niuchwang tael								.74,3
	Shanghai tael	.67,3	.65,2	.71,8	.71,8	.72,5	.72,9	.73,5	.72,4
	Swatow tael								.73,2
	Takao tael								.79,8
	Tientsin tael	.71,4	.69,2	.76,1	.76,2	.76,9	.77,3	.78	.76,8
Colombia	Silver peso	.45,5	.44,1	.48,6	.48,6	.49,1	.49,3	.49,7	.49
Ecuador	do	.45,5	.44,1	.48,6	.48,6	.49,1	.49,3	.49,7	.49
India	Silver rupee	.21 6	.21,0	.23,1	.23,1	.23,3	.23,4	.23,6	.23,3
Japan†	Silver yen	.49,1	.47,6	.52,4	.52,4	.52,9	.53,2	.53,2	.52,8
Mexico	Silver dollar	.49,5	.47,9	.52,8	.52,8	.53,3	.53,6	.54	.53,2
Persia	Silver kran			.08,9	.09,0	.09	.09,1	.09,2	.09
Peru	Silver sol	.45,5	.44,1	.48,6	.48,6	.49,1	.49,3	.49,7	.49
Russia‡	Silver ruble	.36,4	35,3	.38,9	.38,9	.39,3	.39,5	.39,8	.39,2
Tripoli	Silver mahbub	.41,1	3.9,8	.43,8	.43,8	.44,3	.44,5	.44,9	.44,2

*China (silver). The Haikwan tael is the customs tael, and the Shanghai tael that used in trade. Consul-General Denny (CONSULAR REPORTS No. 43, p. 516) says: "The value of the tael varies in the different ports of China, and every port has two taels, one being the Government, or Haikwan, tael, in which all duties have to be paid, and the other the market tael."

†Gold is the nominal standard in Japan, but silver is practically the standard. The fixed value of the gold yen is 99.7 cents.

‡The gold ruble is valued at 77.2 cents. Silver is the nominal standard, but paper is the actual currency, and its depreciation is measured by the gold standard.

⸸The Venezuelan bolivar became fixed in value (19.3 cents) on January 1, 1893.

FOREIGN WEIGHTS AND MEASURES.

The following table embraces only such weights and measures as are given from time to time in CONSULAR REPORTS and in Commercial Relations:

Foreign weights and measures, with American equivalents.

Denominations.	Where used.	American equivalent.
Almude	Portugal	4.422 gallons.
Ardeb	Egypt	7.6907 bushels.
Are	Metric	0.02471 acre.
Arobe	Paraguay	25 pounds.
Arratel or libra	Portugal	1.011 pounds.
Arroba (dry)	Argentine Republic	25.3175 pounds.
Do	Brazil	32.38 pounds.
Do	Cuba	25.3664 pounds.
Do	Portugal	32.38 pounds.
Do	Spain	25.36 pounds.
Do	Venezuela	25.4024 pounds.
Arroba (liquid)	Cuba, Spain, and Venezuela	4.263 gallons.
Arshine	Russia	28 inches.
Arshine (square)	do	5.44 square feet.
Artel	Morocco	1.12 pounds.
Baril	Argentine Republic and Mexico	20.0787 gallons.
Barrel	Malta (customs)	11.4 gallons.
Do	Spain (raisins)	100 pounds.
Berkovet	Russia	361.12 pounds.
Bongkal	India	832 grains.
Bonw	Sumatra	7,096 5 square meters.
Bu	Japan	0.1 inch.
Butt (wine)	Spain	140 gallons.
Caffiso	Malta	5.4 gallons.
Candy	India (Bombay)	529 pounds.
Do	India (Madras)	500 pounds.
Cantar	Morocco	113 pounds.
Do	Syria (Damascus)	575 pounds.
Do	Turkey	124.7036 pounds.
Cantaro (Cantar)	Malta	175 pounds.
Carga	Mexico and Salvador	300 pounds.
Catty	China	1.333⅓ (1⅓) pounds.
Do	Japan	1.31 pounds.
Do	Java, Siam, Malacca	1.35 pounds.
Do	Sumatra	2.12 pounds.
Centaro	Central America	4.2631 gallons.
Centner	Bremen and Brunswick	117.5 pounds.
Do	Darmstadt	110 24 pounds.
Do	Denmark and Norway	110.11 pounds.
Do	Nuremberg	112.43 pounds.
Do	Prussia	113.44 pounds.
Do	Sweden	93.7 pounds.
Do	Vienna	123.5 pounds.
Do	Zollverein	110.24 pounds.
Do	Double or metric	220.46 pounds.
Chih	China	14 inches.
Coyan	Sarawak	3,098 pounds.
Do	Siam (Koyan)	2,667 pounds.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalent.
Cuadra	Argentine Republic	4.2 acres.
Do	Paraguay	78.9 yards.
Do	Paraguay (square)	8.077 square feet.
Do	Uruguay	Nearly 2 acres.
Cubic meter	Metric	35.3 cubic feet.
Cwt. (hundredweight)	British	112 pounds.
Dessiatine	Russia	2.6997 acres.
Do	Spain	1.599 bushels.
Drachme	Greece	Half ounce.
Dun	Japan	1 inch.
Egyptian weights and measures	(*See* CONSULAR REPORTS No. 144.)	
Fanega (dry)	Central America	1.5745 bushels.
Do	Chile	2.575 bushels.
Do	Cuba	1.599 bushels.
Do	Mexico	1.54728 bushels.
Do	Morocco	Strike fanega, 70 lbs.; full fanega, 118 lbs.
Do	Uruguay (double)	7.776 bushels.
Do	Uruguay (single)	3.888 bushels.
Do	Venezuela	1.599 bushels.
Fanega (liquid)	Spain	16 gallons.
Feddan	Egypt	1.03 acres.
Frail (raisins)	Spain	50 pounds.
Frasco	Argentine Republic	2.5096 quarts.
Do	Mexico	2.5 quarts.
Fuder	Luxemburg	264 17 gallons.
Garnice	Russian Poland	0.88 gallon.
Gram	Metric	15.432 grains.
Hectare	do	2.471 acres.
Hectoliter:		
Dry	do	2.838 bushels.
Liquid	do	26.417 gallons.
Joch	Austria-Hungary	1.422 acres.
Ken	Japan	4 yards.
Kilogram (kilo)	Metric	2.2046 pounds.
Kilometer	do	0.621376 mile.
Klafter	Russia	216 cubic feet.
Kota	Japan	5.13 bushels.
Korree	Russia	3 5 bushels.
Last	Belgium and Holland	85.134 bushels.
Do	England (dry malt)	82.52 bushels.
Do	Germany	2 metric tons (4,480 pounds).
Do	Prussia	112.29 bushels.
Do	Russian Poland	11½ bushels.
Do	Spain (salt)	4,760 pounds.
League (land)	Paraguay	4,633 acres.
Li	China	2,115 feet.
Libra (pound)	Castilian	7,100 grains (troy).
Do	Argentine Republic	1.0127 pounds.
Do	Central America	1.043 pounds.
Do	Chile	1.014 pounds.
Do	Cuba	1.0161 pounds.
Do	Mexico	1.01465 pounds.
Do	Peru	1.0143 pounds.
Do	Portugal	1.011 pounds.
Do	Uruguay	1.0143 pounds.
Do	Venezuela	1.0161 pounds.
Liter	Metric	1.0567 quarts.
Livre (pound)	Greece	1.1 pounds.
Do	Guiana	1.0791 pounds.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalent.
Load	England (timber)	Square, 50 cubic feet; unhewn, 40 cubic feet; inch planks, 600 superficial feet.
Manzana	Costa Rica	1⅞ acres.
Marc	Bolivia	0.507 pound.
Maund	India	82⅔ pounds.
Meter	Metric	39.37 inches.
Mil	Denmark	4.68 miles
Do	Denmark (geographical)	4.61 miles.
Morgen	Prussia	0.63 acre.
Oke	Egypt	2.7225 pounds.
Do	Greece	2.84 pounds.
Do	Hungary	3.0817 pounds.
Do	Turkey	2 85418 pounds.
Do	Hungary and Wallachia	2.5 pints.
Pic	Egypt	21¼ inches.
Picul	Borneo and Celebes	135.64 pounds.
Do	China, Japan, and Sumatra	133⅓ pounds.
Do	Java	135 1 pounds.
Do	Philippine Islands (hemp)	139.45 pounds.
Do	Philippine Islands (sugar)	140 pounds.
Pie	Argentine Republic	0.9478 foot.
Do	Castilian	0.91407 foot.
Pik	Turkey	27.9 inches.
Pood	Russia	36.112 pounds.
Pund (pound)	Denmark and Sweden	1.102 pounds.
Quarter	Great Britain	8.252 bushels.
Do	London (coal)	36 bushels.
Quintal	Argentine Republic	101.42 pounds.
Do	Brazil	130.06 pounds.
Do	Castile, Chile, Mexico, and Peru	101.61 pounds.
Do	Greece	123.2 pounds.
Do	Newfoundland (fish)	112 pounds.
Do	Paraguay	100 pounds.
Do	Syria	125 pounds.
Do	Metric	220.46 pounds.
Rottle	Palestine	6 pounds.
Do	Syria	5¼ pounds.
Sagen	Russia	7 feet.
Salm	Malta	490 pounds.
Se	Japan	3.6 feet.
Seer	India	1 pound 13 ounces.
Shaku	Japan	10 inches.
Sho	do	1.6 quarts.
Standard (St. Petersburg)	Lumber measure	165 cubic feet.
Stone	British	14 pounds.
Suerte	Uruguay	2,700 cuadras (*see* cuadra).
Tael	Cochin China	590.75 grains (troy).
Tan	Japan	0.25 acre.
To	do	2 pecks.
Ton	Space measure	40 cubic feet.
Tonde (cereals)	Denmark	3.94783 bushels.
Tondeland	do	1.36 acres.
Tsubo	Japan	6 feet square.
Tsun	China	1.41 inches.
Tunna	Sweden	4 5 bushels.
Tunnland	do	1.22 acres.
Vara	Argentine Republic	34.1208 inches.
Do	Castile	0.914117 yard.
Do	Central America	38.874 inches.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalent.
Vara	Chile and Peru	33.367 inches.
Do	Cuba	33.384 inches.
Do	Curaçao	33.375 inches.
Do	Mexico	33 inches.
Do	Paraguay	34 inches.
Do	Venezuela	33.384 inches.
Vedro	Russia	2.707 gallons.
Vergees	Isle of Jersey	71.1 square rods.
Verst	Russia	0.663 mile.
Vlocka	Russian Poland	41.98 acres.

METRIC WEIGHTS AND MEASURES.

Metric weights.

Milligram ($\frac{1}{1000}$ gram) equals 0.0154 grain.
Centigram ($\frac{1}{100}$ gram) equals 0.1543 grain.
Decigram ($\frac{1}{10}$ gram) equals 1.5432 grains.
Gram equals 15.432 grains.
Decagram (10 grams) equals 0.3527 ounce.
Hectogram (100 grams) equals 3.5274 ounces.
Kilogram (1,000 grams) equals 2.2046 pounds.
Myriagram (10,000 grams) equals 22.046 pounds.
Quintal (100,000 grams) equals 220.46 pounds.
Millier or tonnea—ton (1,000,000 grams) equals 2,204.6 pounds.

Metric dry measure.

Milliliter ($\frac{1}{1000}$ liter) equals 0.061 cubic inch.
Centiliter ($\frac{1}{100}$ liter) equals 0.6102 cubic inch.
Deciliter ($\frac{1}{10}$ liter) equals 6.1022 cubic inches.
Liter equals 0.908 quart.
Decaliter (10 liters) equals 9.08 quarts.
Hectoliter (100 liters) equals 2.838 bushels.
Kiloliter (1,000 liters) equals 1.308 cubic yards.

Metric liquid measure.

Milliliter ($\frac{1}{1000}$ liter) equals 0.0388 fluid ounce.
Centiliter ($\frac{1}{100}$ liter) equals 0.338 fluid ounce.
Deciliter ($\frac{1}{10}$ liter) equals 0.845 gill.
Liter equals 1.0567 quarts.
Decaliter (10 liters) equals 2.6418 gallons.
Hectoliter (100 liters) equals 26.418 gallons.
Kiloliter (100 liters) equals 264.18 gallons.

Metric measures of length.

Millimeter ($\frac{1}{1000}$ meter) equals 0.0394 inch.
Centimeter ($\frac{1}{100}$ meter) equals 0.3937 inch.
Decimeter ($\frac{1}{10}$ meter) equals 3.937 inches.
Meter equals 39.37 inches.
Decameter (10 meters) equals 393.7 inches.
Hectometer (100 meters) equals 328 feet 1 inch.
Kilometer (1,000 meters) equals 0.62137 mile (3,280 feet 10 inches).
Myriameter (10,000 meters) equals 6.2137 miles.

Metric surface measures.

Centare (1 square meter) equals 1,550 square inches.
Are (100 square meters) equals 119.6 square yards.
Hectare (10,000 square meters) equals 2.471 acres.

CONSULAR REPORTS.

COMMERCE, MANUFACTURES, ETC.

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NICARAGUA: TRADE ROUTES, RAILROAD ENTERPRISE, COFFEE AND RUBBER INDUSTRIES, ETC.

I inclose herewith a map of Nicaragua, which gives a rough sketch of the existing railroads in the country and the lines which are projected.*

The thickest-settled parts of Nicaragua lie on the Pacific, and civilization does not reach, on an average, much further inland than about 100 miles from the coast as the crow flies. The real business of the country is mainly limited, therefore, to a narrow belt on the Pacific coast, where some wealth and industry concentrate. Beyond this 100-mile belt, the country is not even properly explored; in fact, in many places, the limit of 100 miles spoken of will, on close examination, be found to be exaggerated.

The country has had, since its discovery by the Spaniards, two outlets for the traffic with the world—Realejo of old, now Corinto, on the Pacific, and San Juan del Norte, on the Atlantic.

As the conquest by the Spaniards, four hundred years ago, was made, creeping up the coast from Panama toward the north in this part of the continent, they stopped for awhile at the large lake of Nicaragua and founded the town of Granada, near the old aboriginal place called Talteba. It was soon found that Granada had facilities of communication with the Atlantic by means of the lake and San Juan River, making it thereby independent of the route via the Isthmus of Panama, by which the conquerors originally came. San Juan del Norte was founded, and this highway made Granada one of the most important towns of old. Furthermore, it was found that the lands toward Rivas were good for cattle breeding and for the production of indigo and chocolate; the country to the north and northeast produced, besides, cattle and gold, and civilization took a firm foothold at Granada and around the upper half of Lake Nicaragua. Near to Granada there were many native villages and towns, which were absorbed.

Pushing northwest, there was found, again, a large tract of good land beyond the upper or Managua Lake, which was overrun by the Spaniards,

* Filed in Bureau of Statistics, Department of State.

and the town of Leon was founded there, as a second center of Spanish government and enterprise. Leon's natural outlet for its commerce with the world is, and was, on the Pacific only, via Realejo, now Corinto; and even in ancient times, there was much rivalry between the two centers of the Spanish dominion—one established at Granada and the other at Leon.

Granada had the communication by water with the world at large, and was not subject to the barrier of the Isthmus and the control or supervision which existed for the trade of Leon at Panama. Granada could help her business, also, by some smuggling with the buccaneers and with the Dutch and English traders who were established on the Atlantic coast and in the minor islands of the Antilles.

This condition of things brought about the first, but faint and unsuccessful, attempt at independence of the mother country (Spain) in Leon in the year 1549, long before any other people living on American soil ventured to take this step.

In the first half of this century, the history of Nicaragua consists only of unceasing party strifes, toward which the inveterate jealousy of the two rival districts, Leon and Granada, contributed the chief or only cause.

After Walker's defeat in 1856, and after the country was completely prostrated, Leon and Granada agreed to have the capital of the country, which was claimed before for either one of the two cities, shifted about halfway from both, to Managua. Managua was then almost nothing better than a village, but in time improved, and when it was found that coffee would grow and produce very well in the hills which are to the south and southwest of the town, the people of Managua and some enterprising natives of Granada, and, later on, also of Leon, took advantage of it and went into coffee planting. At present, on a space of about 36 miles long by 10 miles wide, nearly all in coffee, a crop of nearly 150,000 bags, of 125 pounds each, is raised in good years and shipped for export. On an average, the yearly net profit to the country and district can not fall much short of 3,000,000 silver soles in this industry alone, which, for a country otherwise poor and for settlements which might be said to contain 50,000 inhabitants only, is a fair showing.

Soon after the Colon-Panama Railroad was finished, the old transit route of Nicaragua, via San Juan del Norte, Virgin Bay, Rivas, and San Juan del Sur was abandoned by Vanderbilt, and the route would have gone out of existence altogether had not Granada had a vital interest in a part of it on account of her trade.

This line, consisting of lake and river steamers, fell, about twenty years ago, into the hands of Mr. Pellas, who ran it in such an unsatisfactory way, with regard to the public interest, that Granada, which then controlled the government of the country, induced the latter to build a railroad from Corinto to Managua, to put steamers on the lake of Managua, and to build a further railroad from Managua to Granada. These lines connected Granada, Masaya, Managua, Leon, and Chinandega, the most important towns of the

country, with Corinto, on the Pacific. Thus, they had a speedy and secure service and were independent of Mr. Pellas and the river route.

The bulk of goods leaving and coming into the country, therefore, was and is carried via Corinto and Panama since the establishment of this new highway.

Granada, with the command of the trade near and about the great lake, does little business by way of the river; the bulk of her business goes through Corinto. The trade of Leon is carried on also through Corinto, embracing, besides, that of Ocotal, Tinotega, and Matagalpa, to the north and northeast.

The new communication by railroad and steamers, the gradual increase of the output of coffee—from about 30,000 bags in 1876 to over 150,000 bags in 1895—made of Managua a new center of commerce in the country.

Granada wanted a quick and secure route for its trade in place of the constant difficulties of the river route, but for the very reason that Granada is located at the tail end of the line, she helped to develop the section of the country above, and trade remained at its best only stationary with her. To her dismay, Leon, which has better land for agriculture, was gaining in importance every day; Managua, on account of its coffee, showed some signs of becoming a rival to both Leon and Granada.

To these circumstances, the revolution against President Sacaza, three years ago, might be attributed. Granada won for a few weeks, but not having stamina enough, soon lost the day, and Leon, in combination with Managua, gained the upper hand.

On the 24th of February of the current year, Leon tried to get absolute supremacy in public affairs, but the uprising was disastrous for her, and the country is now in the hands of Managua and Masaya people, Granada having very little, if anything, to say.

In the matter of railroads, there was built a short branch of about 4 miles from Chinandega to Viejo, a year ago, and there is actually building a railroad from Masaya to Catarina, Diriamba, etc., about 26 miles, so as to tap the Pueblos coffee district, which joins the Managua plantations.

Nicaragua wishes to fill the gap on her main line by joining the two sections existing, so that there would be a continuous line from Corinto to Granada, which undoubtedly would be of great advantage.

Toward the Atlantic, two lines are projected, one to the Rio Grande and another to the Rama rivers, where they are navigable. These two projects show that the country is desirous of getting an easy communication to the Atlantic, without being subject to the roundabout way via Panama. It is the same old tendency which has existed since the country was settled.

In the line of custom-houses on the Atlantic coast, there are established by Nicaragua, Cape Gracias-á-Dios, Bluefields, and San Juan del Norte, all of local importance only. On this coast, resides United States Consul Thomas O'Hara, at San Juan del Norte, one of the most diligent officers in the service, with Captain Seat, in Bluefields, as consular agent of the United States.

Goods entering the country by the Atlantic have to pass the custom-house Castillo, an old castle on the San Juan River built by the Spaniards.

The business transacted now from the Atlantic coast is attended to by Consul O'Hara in San Juan del Norte, and the records will show that it is small, considering the great extent of country behind it. The route San Juan del Norte to Granada has been given up these many years for the bulk of trade and transportation, as stated above; nearly all the export and import trade of Nicaragua finds its way via the Pacific.

San Juan del Sur is the port for the local trade of Rivas, Corinto absorbing about 75 per cent of the whole of the trade of Nicaragua.

At San Juan del Sur and Corinto are Nicaragua custom-houses and United States consular agents.

Managua, as the capital, was already prominent, but gradually becomes more and more independent of Granada and Leon. These two towns, which formerly supplied all kinds of commodities, was beaten by Managua's coffee production and direct trading with the world.

That the proper place for the legation of the United States in Nicaragua is in the capital is manifest, and that this should be the seat of a United States consulate is just as comprehensible.

Granada is only 32 miles distant from here. It is easily reached in two hours, and at present does not need an official representative connected with the consular service.

Of American citizens, there are at Managua nearly fifty; at Leon and at Granada, not more than eight or ten in each.

Quite different is it with another district of Nicaragua, which, in a short time, will be one of the most flourishing in the Republic on account of the coffee industry, as there are large estates building up at Matagalpa devoted to the growth of coffee, chiefly by the money and enterprise of American citizens.

Coffee grows in Nicaragua to perfection at an elevation of about and above 2,000 feet; it can go down to 1,000 feet, or even 800 feet, and will grow very well up to 3,000 feet, but at 4,000 feet above the sea it will not thrive.

The high prices of coffee ruling in the world's markets are developing many new districts in Nicaragua besides Managua and the Pueblos, because in these localities good land, fit for coffee planting, has been all taken up. As the plant will grow best in the hills or hilly countries, elevation is sought for—near Granada, on the volcano Mombacho; near Leon, Chinandega, and Posoltega; in Chontales, near Juigalpa.

Unfortunately, there is not in these places land enough, with regard to proper elevation above sea level.

At Matagalpa and Tinotega coffee lands have been taken up by the enterprise of Americans on a large scale. The lands there are of the highest elevation in Nicaragua and of very large extent; they are the watersheds of many large, partly navigable rivers taking their course to the Atlantic. A great

part of this district is yet unexplored, and, with the exception of a few small towns and villages, it is sparsely inhabited. The principal population is that of Indians, living in the forests, never having mixed much with the Spanish race.

One drawback to a speedy development of these sections is the want of roads. Ox carts can be brought up to Matagalpa only in the dry season; in the rainy season, traffic is possible only on mule back, and even such cargo transport is often interrupted for weeks and months every year.

Matagalpa and Tinotega lands have been taken up to a very large extent and mostly by foreigners; even Guatemala people started coffee planting on a large scale there, because the climate and many other conditions are favorable for the success of the enterprise.

Six years ago, there were not more than four or five Americans in Matagalpa; at present, the American colony in the town outnumbers all other nationalities put together, and counts up to about one hundred individuals.

The character and social qualifications of many of these pioneers are of the best. Mr. Hawkins, Mr. Rice, the Manning brothers, and Mr. Perez have their wives, all Americans, with them. All and many more are engaged in the planting of King Coffee of Nicaragua, striving the hardest to make their lands regular coffee gold mines in a short time. The gentlemen above named have large estates, and each of them holds an acreage of 1,000, 2,000 and more acres of land.

There are the Indiana Coffee Company, the Esmeralda Coffee Company, the Matagalpa Coffee Company, the Tumaigui Coffee Company, and several more of such American coffee plantations which are very promising. They will, in a few years, produce, most likely, more coffee than all the old Nicaragua plantations can deliver at present.

HENRY E. LOW,
Vice-Consul.

MANAGUA, *July 5, 1896.*

RUBBER INDUSTRY OF NICARAGUA.

I inclose herewith the translation of a law by which the exportation of india rubber gathered in the national forests of the Republic is prohibited for the term of ten years from the 1st of January next.

HENRY E. LOW,
Vice-Consul.

MANAGUA, *July 22, 1896.*

[Translation.]

DECREE RELATING TO THE EXPORTATION OF INDIA RUBBER.

To prevent the extinction of the india-rubber trees in the national forests and to develop their cultivation in plantations, in conformity with the bounty laws, the President of the Republic decrees:

(1) From the 1st of January next, it will be prohibited in all ports of the Republic to export india rubber which has not been cultivated in plantations, in accordance to the laws of the 6th of March, 1883, and 23d of March, 1887.

(2) The foregoing prohibition will last for ten years from the date indicated, and whosoever shall act contrary shall be fined in accordance with the regulations concerning frauds

upon the treasury, shall lose for the benefit of the treasury the india rubber, and, besides, shall be fined to the amount of four times its value.

(3) India rubber can be exported only when coming from regular plantations, conducted, as before said, in conformity with the bounty laws of 1883 and 1887; but to verify it, the exporters must register their rubber farms in the office of the tax collector of the district, expressing the number and age of trees. This registration will be gratuitous and must be made every year in the first days of January. The exporters must receive from the tax collector a waybill (a certificate on, and to go with, the produce forwarded) made out to order; in order that this document can be indorsed, they must present their registration certificate and forward a copy of both documents to the Minister of Finance.

(4) Anybody found extracting india rubber from the national forests will be considered as a smuggler (contrabandist), and will be sentenced and fined as such, by authority of the judicial or police department.

(5) To be presented in the next sitting of the legislature.

EXPORTS OF RUBBER FROM SAN JUAN DEL NORTE.

There is no record in this office of invoices presented prior to April 14, 1874. The records made between 1880 and 1895 give the value of the several shipments of rubber, but fail to show the weights. I tried to make a table of weights from the original invoices, but had to abandon it, as many of these invoices are missing. Between April 14, 1874, and July 1, 1896, shipments of rubber have been made from San Juan del Norte to the United States as follows:

Year.	Quantity.	Value in United States currency.	Year.	Quantity.	Value in United States currency.
	Pounds.			*Pounds.*	
1874	363,952	$128,949.63	1887		$251,573.12
1875	611,064	194,209.98	1888		205,393.92
1876	726,399	234,865.74	1889		146,672.39
1877	891,636½	308,947.44	1890		126,600.10
1878	893,401	297,338.54	1891		102,028.00
1879	1,021,363½	409,814.72	1892		115,261.00
1880	1,459,863½	721,889.66	1893		96,532.93
1881		522,384.80	1894		110,810.09
1882		727,872.01	1895	288,050	133,862.68
1883		625,974.58	1896	132,573½	62,118.35
1884		428,523.42	Total	*6,388,303	6,578,783.02
1885		320,940.36			
1886		306,219.56			

*Not including years 1881 to 1894, inclusive.

Notwithstanding the law made in Costa Rica some years ago prohibiting the cutting of rubber, much of the rubber shipped from San Juan del Norte comes from Costa Rica. It is estimated that Costa Rica has contributed between 35 and 60 per cent of all the rubber shipped from San Juan del Norte.

Our consular agent at Bluefields, Mr. W. H. Seat, has been requested to make a report showing the shipments of rubber from that port. He has also been asked to report in relation to rubber-tree planting along the Bluefields River.

Mr. Low writes that he knows of but two plantations in western Nicaragua upon which such experiment has been successfully tried, and that the two plantations will not yield over 5,000 pounds of rubber per annum.

It is impossible to obtain reliable figures showing exports from here to European countries.

In making my last annual report, I discovered that 1,987,553 pounds of coffee had been shipped to Germany, instead of 980,650 pounds, as shown by the Government books. Other records in the Government building are correspondingly inaccurate.

Mr. C. D. Scott, the local agent for the Royal Mail Company, has shown me his books, and from the figures obtained from that and other sources it appears that between January 1, 1890, and July 1, 1896, rubber has been shipped from San Juan del Norte to European ports as follows (values in United States currency):

England	$126,412.53
France	2,520.85
Germany	5,997.75
Holland	152.25
Total	135,083.38

I am not satisfied with these figures, but they are correct as far as they go.

Between 1874 and 1894 rubber shipped from San Juan del Norte was invoiced at from 15 to 70 cents (United States) per pound. In 1895, it was invoiced at from 41½ to 53 cents per pound, and has been invoiced this year at from 38¼ to 52 cents. The rubber shipped from San Juan del Norte to the United States for the year ended June 30, 1896, amounted to $134,584.25* (United States). Goods imported into San Juan del Norte from all countries during the same year amounted to $139,749.90, or but $5,165.65 more than the value of the rubber shipped from the port to the United States.

The merchants claim that they make but little profit on the rubber they handle and that they purchase it to be shipped in exchange for their foreign goods.

The last shipment of scrap rubber was made from here on August 1. The rubber was invoiced at 40 cents. According to the India Rubber World of July 10, Nicaragua scrap rubber was worth at that time in New York from 46 to 46½ cents.

THOMAS O'HARA,

SAN JUAN DEL NORTE, *August 5, 1896.* *Consul.*

RUBBER PLANTATIONS ON BLUEFIELDS RIVER.

I inclose herewith a clipping from the Bluefields Recorder, of June 6, in relation to the cultivation of the india-rubber tree along the Bluefields River.

THOMAS O'HARA,

SAN JUAN DEL NORTE, *June 17, 1896.* *Consul.*

* In the tabulated statement, the amount is given as $62,118.35; the discrepancy is not explained by the consul.

[From the Bluefields Recorder, June 6, 1896.]

RUBBER TREES.

On this subject of agriculture, we may add that a great deal of attention is being given to the cultivation of the india-rubber tree. Several of our banana growers on the river, while cultivating the product of the more rapid growth (the banana) devote some of their time to the india-rubber tree, which has the advantage of being a product full of staying qualities, yielding handsome profits after it has attained its full development, and which has not that baneful influence on the soil which is the peculiarity of the banana. We do not believe that we are beyond the mark when we say that there are to be found on several plantations on the Escondido more than 75,000 rubber plants, vigorous and promising, ready for transplantation. Ten or twelve years after these shall have been planted, bananas will be nowhere; the very places where they are now grown will be exhausted and allowed to lie fallow for the subsequent cultivation of other and less ephemeral products.

RUBBER-BEARING TREES AND PLANTS OF NICARAGUA.

The accompanying facts in reference to the kinds of trees and vines in Nicaragua (and tropical America) that yield rubber, their cultivation, etc., are contributed as an addendum to my report published in 1892 in SPECIAL CONSULAR REPORTS, India Rubber.* Some of these facts are from personal observation and studies made since I wrote the report published in 1892. I now send them to the Department of State, because I am again receiving letters from United States citizens and corporations, requesting information on this subject, of increasing interest to United States manufacturers of electrical machinery, bicycle wheels, rubber goods, etc., and almost impossible at present to get from any country. The few in India who are partially informed by experiments in cultivation of rubber-yielding trees are withholding from the public the results of their experiments. For me to write full and reliable answers to each letter would require too much time, yet if I decline to reply, Europeans may first become possessed of the valuable facts and utilize them before the people of the United States are informed of the large profits to be realized.

Recently, many persons in western Nicaragua have declared their intention to plant and cultivate lands in the eastern part of the State in elastic-rubber† yielding trees and vines. Such estates are locally named "haciendas de hule."‡ A large percentage of these persons have accumulated money for investment, during recent years, from their coffee estates in western Nicaragua. They are now inquiring concerning the localities to be found having the most suitable lands and climate, the species and varieties of trees and vines that annually or biennially yield the largest quantity of good rubber, the proper distance apart for planting the trees and vines, the best modes of cultivation, how many years elapse before it is proper to commence the profitable annual or biennial collection of rubber, the preferable intermediate

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* Pages 367-374.

† I use he words elastic rubber because some varieties, as the "juno," or "joono," are but slightly elastic.

‡ "Hule" is the Central American and Mexican name for india rubber; "ule" is the aboriginal name.

or secondary crops, and what is a reliable comparative statement of the annual profits from an acre of mature rubber and coffee trees.

As these facts and inquiries may interest many of our citizens, I give a general answer to each of the foregoing interrogatories, taken from my "notes," written while personally making natural-history observations and studies, because there are no rubber estates (or but two small, carelessly cultivated ones) or experimental stations in Nicaragua where reliable information can be obtained.

As to the number of species of trees and vines yielding elastic rubber and areas in different districts suitable to such trees and vines and the varieties adapted to each district, see my report in SPECIAL CONSULAR REPORTS, India Rubber, since writing which I have revisited some of the districts therein described, especially spending about fourteen months in the central and northeastern parts of Nicaragua, uninhabited by man. These explorations confirm that report, with the added conviction that many of the valleys in central and northeastern Nicaragua contain all the natural conditions for a full annual or biennial yield of an excellent quality of elastic rubber. They are the localities supporting numerous groves of large-sized trees yielding rubber until about fifteen years ago, when nearly all the trees had been killed by too severe scarifying or by felling on the part of irresponsible collectors. A reliable general description of northeastern Nicaragua can be found in Science (New York City), issue of March 31, 1893, and in the December, 1893, Bulletin of the Bureau of the American Republics.

RUBBER-PRODUCING DISTRICTS.

Localities in Nicaragua south of latitude 15° north and between longitudes 84° 10′ and 85° 35′, in low valleys where the soil is deep alluvial or deep vegetable humus and sand and capable of being rapidly drained and in a climate that is almost uniformly warm and humid, suit the largest rubber-yielding varieties of trees and vines. Some varieties, however, giving an excellent quality of very elastic rubber are indigenous to a higher, drier climate and soil.

VARIETIES OF RUBBER TREES.

There are several varieties and species of the natural orders *Urticaceæ*, *Sapotaceæ*, *Moraceæ*, *Aponaceæ*, and *Euphorbiaceæ*, indigenous in Nicaragua, which, when scarified deeply, exude a milk-like sap, from which rubber of various degrees of elasticity is separated. The quantity, annually, and quality in elasticity differ usually with the species and with different favorable or less favorable conditioned localities. Some prefer the low alluvial lands under a humid atmosphere, as in the north and south valleys in eastern Nicaragua, while other varieties flourish best in more elevated, sandy, and decomposed vegetable matter—lands rich in potash, as the volcanic valley districts south of Lake Nicaragua and forming the peninsula of Coseguèna. The most desirable varieties for quantity per annum and quality of rubber

are, deciding from my observations of the uncultivated tree in its native locality, the *Siphonia elastica* and *Castilloa elastica*, habitants of well-drained, low, alluvial valleys that are usually blanketed and kept warm by a humid atmosphere. The second best rubber producers, in quality and quantity, are of the ficus family, a variety locally known as Matapala, an epyphite having numerous bodies from aërial roots (like the banyan tree). It is also an inhabitant of low, fertile, well-drained lands. By cultivation, this tree would, most probably, fully equal the other low-valley varieties in quality and annual output of rubber. It has the advantage that if one of its trunks or bodies is deadened by excessive bleeding or drainage of the sap, it has several other live trunks from which to obtain supplies of rubber.

Another good variety is of the species *Manihot balano*, locally known as the "arbolde vaca" or "palo de reche de vaca" (cow-milk tree), a large, tall, hardy, indigenous kind found at altitudes of 1,000 to 2,000 feet above the ocean.

The quantity of the annual yield of elastic material depends, the soil and climate being suitable, on the bulk of the bast or lactiferous tissues that exist or that can be developed in the tree or vine. Some trees of 2 to 3 feet diameter and 35 to 50 feet tall will give annually 20 to 40 pounds of good rubber.

The quality of the rubber depends largely upon the shape or form of the cells and spaces composing the bast, or lactiferous tissue, and in part in the process used to separate the elastic material from the emulsion-like sap.

Quality and quantity, therefore, are responsive to cultivation—to be increased or decreased.

PLANTING, CULTIVATION, AND COLLECTING.

The seeds should be sown in beds and transplanted to a nursery when 1 year old, and thence removed to their permanent place when 2½ to 3 years of age, in rows, say, 20 by 20 feet for the Castilloa, 22½ by 22½ feet for the Siphonia, and 25 by 25 feet for the Matapala or ficus variety; or, say, 64 Matapala, 81 Siphonia, and 100 Castilloa trees per acre.

Cultivation consists in ditching the land so as to drain it slowly or rapidly at will, keeping it moist without permitting water to stand in pools or low places. During the rainy season, drain rapidly. Keep all undergrowth cut down and the land "hilled up" around the trees in cone shape to about 6 inches higher than the general level within 5 feet of each tree. Deaden or fell other varieties of trees and vines until they shade but a very small part of the surface of the land.

In collecting elastic rubber, commence during the sixth or seventh year of the tree's age to collect rubber by small area incisions through the bast, taking, if the trees have matured properly, from 8 to 12 pounds of rubber from each tree biennially, but after the tree is 12 years of age, a sufficient quantity of the sap or emulsion could be annually extracted from each tree to yield 10 to 15 pounds of good elastic rubber.

Among the several modes of incision the two following are, I believe, far preferable to other processes: (1) Cut with a curved, sharp instrument channels through the lactiferous tissues similar to those made in pine trees in "turpentine orchards" in the southern parts of the United States; (2) drive tubes cut from the internodes of bamboo (abundant in lands in Nicaragua suitable for trees that produce rubber) through the bast or lactiferous tissue, first making a slanting cut of a part of the circumference of the tube and drive the sharpened end, 1½ to 2 inches long, into the tree; then, when the collecting season is past, "plug up" the tubes of that season with wood that has been dipped in some liquid insecticide and saw off the tube and its wooden core even with the thin exterior bark of the tree.

The coagulation of the milk-like exudation and the separation from it of the elastic material can be effected by heating to 167° to 175° F. and stirring in a hot decoction or hot, strong tea of the leaves and twigs from some species of convolvulacæ—as morning glory or bindweed, or, stirring into the emulsion, when fresh and hot, the smoke from burning palm nuts or other oleaginous nuts—all of which are abundant in districts where the rubber-yielding vines and trees grow.

Secondary crops, planted between the rows of rubber-producing trees, could be the Liberia coffee tree, plantains, bananas, or such fibrous plants as hennequen or sisal or pinka, pita, etc., of the agave family; also, the vanilla-bean vine, one vine to each rubber tree, which would yield an annual crop equal in value to the rubber product. While it is true that the vanilla vine needs trees of this class for sustenance, yet it is probable that the vanilla would not materially reduce the flow of sap or the quantity of elastic material from the tree.

PROFITS OF RUBBER GROWING.

A comparative estimate of the annual value per acre of coffee trees and rubber trees, at 9 years of age and thereafter, at present (1896) prices and profits, would be about—net profit from an acre in rubber trees, in Nicaragua, say, only 64 to each acre, 10 pounds each=640 pounds at 30 cents net per pound, $192; net profit from an acre in coffee trees in Nicaragua, say, fully 400 to each acre, 1¼ pounds each=500 pounds, at 13 cents net per pound, $65.

Bananas and plantains, after they are 1 year old, furnish a large percentage of food for all animals living on the estate. The plantain, when matured and cooked, is easily digested, and the most nutritious of food for man and beast. The banana, when full grown, but green, and cooked and mashed with hot water into a thick mush, is easily digested and nutritious and is relished and eaten in large quantities by Indians in northeastern Nicaragua, especially by the Sumoos.

J. CRAWFORDS.

MANAGUA, *July 22, 1896.*

FOREIGN TRADE OF SAN JUAN DEL NORTE.

The San Juan del Norte exports and imports for the year ended June 30, 1896, were as follows:

Exports.

Articles and whither exported.	Value in—	
	Nicaraguan currency.	United States currency.
Costa Rica.		
Specie (silver)	$1,000.00	$493.00
England.		
Coffee	101,374.91	49,977.83
Copper	1,724.14	850.00
Gold dust and bars	143,288.03	70,641.00
Indigo	2,756.59	1,359.00
Personal effects	101.42	50.00
Rubber	19,885.13	9,803.37
Stuffed birds	1,014.20	500.00
Tortoise shells	8,596.35	4,238.00
Total	278,740.77	137,419.20
France.		
Coffee	46,604.85	22,976.19
Gold dust and bars	22,843.81	11,262.00
Indigo	202.84	100.00
Total	69,651.50	34,338.19
Germany.		
Coffee	680,788.11	335,628.54
Hides	16,571.01	8,169.50
Deerskins	1,445.23	712.50
Total	698,804.35	344,510.54
Jamaica.		
Brandy	608.52	300.00
Personal effects	405.68	200.00
Specie (silver)	1,635.90	806.50
Total	2,650.10	1,306.50
United States.		
Cocoanuts	184.99	91.20
Coffee	492,137.63	242,623.85
Earthenware (old)	405.68	200.00
Feather plumes	532.45	262.50
Gold dust	63,496.96	31,304.00
Hides	46,866.09	23,104.98
Maps	(*)	(*)
Printing type	202.84	100.00
Rubber	272,990.36	134,584.25
Skins:		
Deer	38,601.12	19,030.35
Tiger	10.42	5.14
Specie (silver)	30,425.96	15,000.00
Total	945,854.50	466,306.27
Grand total	1,996,701.22	984,373.70

*Unknown.

The following table shows the value of goods consigned to San Juan del Norte merchants:

Imports.

From—	Value in—	
	Nicaraguan currency.	United States currency.
Colombia	$421.17	$207.64
Cuba	166.33	82.00
England	74,807.06	36,879.88
France	8,408.52	4,145.40
Germany	45,347.06	22,356.10
Holland	1,960.08	966.32
Jamaica	12,033.71	5,932.62
United States	140,324.42	69,179.94
Total	283,468.35	139,749.90

It is impossible to secure absolutely reliable figures showing the values of through freights landed in San Juan del Norte, but consigned to merchants in the interior. No official record of such goods is kept in San Juan del Norte, as they are not subject to the payment of the commercial, or "contribution," tax levied on imports for the support of the town. However reliable the custom-house books in Castillo may be in most respects, they furnish unsatisfactory evidence of the value of imports from any particular country. From such statistics as are available, the through freights for the year ended June 30, 1896, were:

Countries.	In Nicaraguan currency.	In United States currency.
Austria	$5,701.26	$2,810.72
England	78,934.32	38,914.62
France	38,947.57	19,201.15
Germany	54,729.55	26,981.67
Holland	435.09	214.50
Italy	1,048.84	517.08
Jamaica	1,054.77	520.00
Spain	616.31	303.84
United States	266,588.74	131,428.25
Total	448,056.45	220,891.83

According to these figures, the total value of imported goods arriving at the port of San Juan del Norte during the year was $360,641.73 (United States), the imports from the United States amounting to $200,608.19 (United States).

THOMAS O'HARA,

SAN JUAN DEL NORTE, *July 11, 1896.* *Consul.*

PROPOSED IMPROVEMENT OF SAN JUAN RIVER AND HARBOR.

The merchants and other leading citizens of San Juan del Norte received written invitations yesterday from the governor intendant to attend a public meeting at 7 o'clock in the evening. The object of the meeting, as stated in the invitation, was "to consider matters of vital importance to the port." At the appointed hour, about thirty-five persons were present, including Mr. H. F. Bingham, British consul; Dr. J. Johnstone, British vice-consul; and Mr. C. F. Bergmann, German consul. Each of the three persons named is engaged in trade in San Juan del Norte. The merchants of the town were all present, with the exception of a few Jamaicans and an Italian subject. Five Americans were present, viz, Charles D. Scott, H. W. Mallitz, Henry de Soto, B. W. Pyle, and Alfred Brand.

The meeting was addressed by Señor Don Enrique Espinosa, governor intendant of San Juan del Norte; Señor Don Francisco Guerrero, late Minister of War; Señor Don Francisco E. Torres, late acting inspector-general of the Atlantic coast; and Señor Santiago Lopez, a local attorney.

The speakers said that it had long been the intention of the Government of Nicaragua to improve the San Juan River and the harbor of San Juan, and that the petition of the citizens of San Juan del Norte in 1895 for an appropriation for such purposes had been seriously considered.

As an evidence of such intention, reference was made to the act of February 10, 1876, and to Presidential decrees of May 25, 1869, June 10, 1869, and June 22, 1877.

According to the speakers, the Government is still anxious to improve the river and harbor, and is only deterred from doing so by the prevalence of the erroneous idea, not only in San Juan del Norte, but in many other parts of the Republic, that under the treaty of January 28, 1860, between Nicaragua and Great Britain, commonly called the Managua treaty, the town of San Juan del Norte is a free city, as well as a free port.

In my dispatch of February 12, 1896,* I said:

> The much-talked-of rights of the inhabitants of San Juan del Norte under the treaty of January 28, 1860, between Nicaragua and Great Britain, are simply these, that San Juan del Norte shall be a free port under the sovereign authority of Nicaragua, and that its inhabitants shall enjoy religious freedom and the right of trial by jury. Whatever other peculiar privileges they may enjoy have been granted them by the Government of Nicaragua independent of any treaty. Regulations for the port and town were adopted by Nicaragua February 20, 1861, and this special code, as amended from time to time, is still in force. The instrument may be called the city charter. Like any other town charter, it is subject to the control of the body granting it, and, although the statement may be challenged by certain persons domiciled in the place, the general laws of the Republic control in regard to matters concerning which the charter is silent.

Similar views were expressed by the speakers at the meeting last evening. They also asserted that, with the single exception of the collection of duties,

* Printed in CONSULAR REPORTS No. 190 (July, 1896), pp. 410-422.

assuming the treaty of Managua to be operative, no privilege or exemption can properly be claimed by a resident of San Juan del Norte that may not also properly be claimed by any resident of any other town in Nicaragua. Religious freedom and trial by jury, they said, are guarantied throughout the Republic, and the citizens in most other districts have the right of appeal from the judgments of local tribunals—a right which is not accorded to the people of San Juan del Norte.

The President and his ministers, the speakers stated, have no confused ideas respecting the political status of the town of San Juan del Norte, but, unfortunately, the neglect of too many other citizens to investigate the question has led to the formation of opinions which, while entertained, will tend to make unpopular the appropriation of general funds for the improvement of the San Juan River and harbor.

The claim that San Juan del Norte is a free city seems to have nothing to rest upon but the treaty signed October 17, 1856, by the Earl of Clarendon, representing Great Britain, and Mr. Dallas, representing the United States. According to this treaty, which was not ratified, and to which Nicaragua was not a party, the Republic of Nicaragua was required to—

> Constitute and declare the port of San Juan del Norte a free port and the city a free city (though under the sovereign authority of the Republic), the inhabitants of the city to have the right to govern themselves by means of their own municipal government, to be administered by legislative, executive, and judicial officers of their own election, according to their own regulations, and the inhabitants to be exempt from military service, except for the defense of the city and within the bounds of the same.

Señor Torres and other speakers expressed the belief that Great Britain would offer no objection in case the Government of Nicaragua, in response to a petition unanimously signed by the citizens of San Juan del Norte, should declare an average duty of 20 per cent on all goods entering the port of San Juan del Norte, the moneys thus raised to be expended in deepening the San Juan River, in removing the bar at the mouth of the harbor, and in maintaining the river and harbor in navigable condition.

Mr. Ramon Enriquez, a Nicaraguan, and Mr. F. A. Pellas, an Italian subject, were the only merchants who participated in the discussion following the speeches mentioned. Mr. Pellas is the sole owner of the only line of steamboats on the San Juan River and Lake Nicaragua. He is also a commission merchant and his shipments to Granada and other interior towns amount to more than all other shipments from San Juan del Norte to the interior.

Article 7 of the treaty of Managua reads as follows:

> The Republic of Nicaragua shall constitute and declare the port of Greytown, or San Juan del Norte, a free port under the sovereign authority of the Republic. But the Republic, taking into consideration the immunities heretofore enjoyed by the inhabitants of Greytown, consents that trial by jury in all cases, civil or criminal, and perfect freedom of religious belief and worship, public and private, shall be guarantied to them for the future.
>
> No duties or charges shall be imposed upon vessels arriving in or departing from the free port of Greytown other than such as may be sufficient for the due maintenance and safety of

the navigation, for providing lights and beacons, and for defraying the expense of the police of the port; neither shall any duties or charges be levied in the free port on goods arriving therein, in transit from sea to sea. But nothing contained in this article shall be construed to prevent the Republic of Nicaragua from levying the usual duties on goods destined for consumption within the territory of the Republic.

By a decree of November 23, 1860, Nicaragua declared the port of San Juan del Norte to be "a free port for the commerce of all nations." A similar declaration appeared in the regulations for the port, which instrument was approved by the Government of Nicaragua on February 20, 1861. The regulations at the time of their adoption provided that all merchandise imported into the port should "pay a duty of 5 per cent on the total amount of the original invoice, including every expense, except the freight from the port of shipment to San Juan."

On December 1, 1863, it was decreed that a duty of 10 per cent instead of 5 per cent should be levied on importations. The decree provided that of the duties so collected, two-fifths should be applied toward the expenses of the town and three-fifths toward the payment to the Mosquito Indians of the subsidy mentioned in the Managua treaty.

By a decree of December 17, 1866, the export duty on rubber was abolished, and flour, potatoes, rice, and sixteen other articles were permitted to be imported into San Juan del Norte "free of any duty whatever."

The act of February 10, 1876, provided for an export duty of 4 per cent ad valorem on rubber and hides and of 2 per cent ad valorem on manufactured articles and the natural products of the country.

A supplementary decree was published June 22, 1877, establishing a tariff of values for the calculation of export duties.

By a decree of January 29, 1864, it was provided that goods imported into San Juan del Norte and subject to the payment of 10 per cent duty should, if afterward shipped to the interior, be entitled to a drawback of two-thirds the amount of such duty.

The advocates of the measure to abolish the free port assert that the town is dead and that nothing will resuscitate its trade but the acceptance of the Government's conditional offer to improve the river and harbor. They say that instead of being oppressive, the Government of Nicaragua was extremely liberal to the people of San Juan del Norte, and that for many years, taxes were lighter in San Juan del Norte than in any other seaport town in Spanish America. They do not hesitate to say that but for the opposition of the San Juan del Norte merchants, the decree of June 18, 1877, would never have had application to San Juan del Norte. According to this decree, only such goods were admitted duty free into the Republic as were expressly mentioned in the decree, the list of excepted articles embracing but three articles mentioned in the decree of December 17, 1866, viz, machinery, printed books, and instruments for use in arts and sciences.

According to Mr. Pellas, the appeal of San Juan del Norte merchants for the intervention of Great Britain, which resulted in the submission of the question to the Emperor of Austria for arbitration, was an act of folly and

could only result, as it did result, not alone in increased taxation, but in the repeal of the drawback decree of January 29, 1864, a decree extremely favorable to the merchants of San Juan del Norte.

It was conceded by Great Britain in the brief prepared for the Emperor of Austria that the treaty of Managua is the only treaty in existence under which San Juan del Norte is actually a free port.

In the judgment or award signed by the Emperor of Austria on July 2, 1881, it is declared that while Nicaragua shall not impose duties on goods either imported into or exported from the territory of the free port of San Juan del Norte, it may "impose import duties on goods and on their conveyance from the territory of the free port of San Juan del Norte to the territory of the Republic, and export duties on their conveyance from the territory of the Republic to the free port of San Juan del Norte."

In the written opinion which accompanied the Emperor's award, it is said:

Inasmuch as no duties at all may be levied on goods in a free port, it is equally unallowable to levy duties on imported or exported goods for the purpose of meeting the costs of the administration of the port town and of the maintenance of the free port.

The means for carrying such local requirements must be raised by local taxation in other forms, as, for example, by levying a tax upon the consumption of goods imported free. The system of providing for the costs of the administration of the town and the maintenance of the free port of San Juan del Norte, introduced by Presidential decree of February 20, 1861, by an import duty on the goods imported there, will therefore have to make room for some other system.

Since 1881, the port regulations have been silent regarding the collection of duties on either exports or imports. All goods shipped either to or from the interior must necessarily pass the custom-house at Castillo, on the San Juan River, as there are neither railways nor wagon roads connecting the two sides of the country. Export and import duties are collected at Castillo regardless of where the goods are from or to what port destined.

Dutiable goods and products shipped from the interior to San Juan del Norte are subject to the payment of the same duties as like goods or products shipped to foreign ports, which is also true of goods and products shipped to San Juan del Norte from either Cape Gracias-á-Dios or Bluefields, the three ports last mentioned being the only recognized Nicaraguan ports of entry on the Atlantic coast. There are custom-houses at the two latter ports, and dutiable goods shipped to either of such ports from San Juan del Norte are subject to the payment of duties.

Although there is neither custom-house nor customs collector in San Juan del Norte and no mention is made of duties in the local laws, it requires an adept in hairsplitting to satisfy himself or anybody else that duties are not collected on every article imported into San Juan del Norte for sale. A tax is collected, the details of which were described in my dispatch of February 12, 1896.* This tax is known as the "commercial tax" or "contribution tax." There is no tax on personal property. Lands and houses are separately taxed, but the tax on each is nominal.

* See CONSULAR REPORTS, No. 190 (July, 1896), p. 427.

In 1895, the public revenues amounted to $33,819.65 (Nicaraguan currency), of which but $2,468.61 was collected for house and land taxes. Fines, slaughterhouse fees, post-office and telegraph incomes, entertainment licenses, and sales of stamped paper yielded receipts aggregating $5,801.23. The balance, viz, $25,549.81, was derived from the commercial tax, which tax was fixed at $12,000 for each half year, but the amount of $1,549.81 was collected from delinquents of the preceding year.

As stated in my dispatch, the governor intendant submits a budget semiannually to the President of the Republic. The President then issues a decree fixing the amount of the commercial tax for the ensuing six months. Of the commercial tax so decreed, every six months each saloon or "cantina" pays $25, each shopkeeper, not an importer, $15, and each commission merchant 5 per cent of his commissions during the preceding half year. The balance is apportioned among the importers, each importer paying thereof, in accordance with his proportion of the value of the total imports during the six months immediately preceding, reference for such purpose being had to the several invoices of goods imported during such period. The importers, of whom there are but eleven, pay at least nine-tenths of the commercial tax. Over 90 per cent of the imports are consigned to four importers.

If personal property or incomes were taxed, the method of examining a merchant's invoices to determine the value of his property or the extent of his income might, if properly conducted, lead to as equitable results as an assessment of his property in accordance with the method employed in assessing the property and incomes of his fellow-townsmen not engaged in importing foreign goods. In such case, notwithstanding the method, the taxes paid by him would not necessarily be duties. As personal property is not taxed in San Juan del Norte, such property, no matter how valuable or productive it may be, not being liable to taxation unless imported by a person engaged in trade, the claim that duties are not collected at the port is too transparent.

There is one way for a tradesman to get his imports in free of duty. There seems to be no provision made to reach a merchant who opens a store and gets in his imports after the semiannual apportionment of the commercial tax and closes shop and leaves town before the next apportionment.

According to Mr. Pellas and others who favor the abolishment of the free port, the town of San Juan del Norte had a respectable trade under the old system with all the coast towns between San Juan del Norte and Cape Gracias-á-Dios, and with the interior of the country, but the present system has completely destroyed the coast trade and seriously crippled trade with the interior.

They say that while they now pay what is equivalent to a duty of 15 per cent on imported goods, which is but little less than the average duty collected on imports into Bluefields, no drawback is allowed, as formerly, at Castillo on goods shipped from San Juan del Norte to the interior. They

argue that Bluefields merchants, while required to pay duties on all imports, are yet not only able to control all the coast trade north of San Juan del Norte, but to undersell San Juan del Norte merchants in the case of goods destined for the interior via the San Juan River.

The reasons assigned are that when Bluefields goods are shipped to the interior, the full amount of the duties paid on such goods at Bluefields is deducted at the Castillo custom-house from the duties leviable on such goods at that point, and that while Bluefields goods may lawfully be landed and sold at any point on the Atlantic coast of Nicaragua without the payment of additional duties, San Juan del Norte goods may only be landed at such points upon payment of full duties at either Bluefields or Cape Gracias-á-Dios and without any allowance for the local tax paid thereon in San Juan del Norte.

They argue, too, that it would be much better to pay an average duty of 20 per cent upon imports, with the privilege of full drawback on goods shipped to the interior and with the Government's assurance that such duties should not be increased, than to continue paying the commercial tax, which is liable to be increased at any time by the governor intendant.

The commercial tax was $12,000 for the second half of 1895, $10,000 for the six months ended June 30, 1896, and has been fixed at $15,000 for the ensuing half year. As stated in my dispatch of February 12, the people have no voice in the government of the town, the governor intendant being appointed by the General Government and having almost absolute control of the revenues.

No public improvements worth mentioning have ever been made, the greater part of the revenues being paid out to officials and subordinate employees. Of $33,819.65 revenue in 1895, $27,501.60 was expended for salaries and expenses of officials and expenditures aggregating $3,830.41 were not itemized.

Although the police force has been reduced and no public improvements are contemplated, the commercial tax has been materially increased, and the advocates of the change indicated assert that, if for no other reason, the change should be made to avoid the increase of the commercial tax to such extent as to make it impossible for importers to remain in business, a contingency not unlikely to happen, they suggest, should the Government once determine to bring the inhabitants of the town to terms. In this connection, it is argued that should the commercial tax be increased to $100,000 or $150,000 a year, no foreign government would intervene, as nations are not apt to resort to extreme measures to enforce the reduction of taxation in a neighboring country.

Frequent reference was made by the speakers last evening to the report of Señor Don Santiago Callejas, who was specially commissioned last year by the President to visit the Atlantic coast on a tour of inspection. A translation of his report was transmitted with my dispatch of December 30, 1895.*

* Synopsis printed in CONSULAR REPORTS No. 187 (April, 1896), p. 523.

For some years the advisability of changing the custom-house from Castillo to San Juan del Norte has frequently been urged. The removal, it is claimed, would not interfere with the free-port character of San Juan del Norte, as all goods consigned to merchants and others in the town would be delivered without the payment of duties exacted upon goods destined for the interior. The principal argument in favor of the removal seems to be that the transportation of goods would be expedited, the delays now necessitated at Castillo being serious.

On the other hand, it is said that while no trouble might be had in handling imports, the right to levy duties in San Juan del Norte on certain exports which now pay duties at Castillo might be challenged and lead to serious complications and embarrassments. It is also argued that while an extensive contraband trade is carried on at Castillo in the nighttime, the character of the location is such that no better point for a custom-house could be selected on the river, and that its removal from there would result in a material falling away of the public revenue. Speaking upon this point, Minister Callejas says:

> Much has been said in regard to changing the custom-house from Castillo to San Juan del Norte, and opinions are diverse respecting the utility of this measure.
>
> After visiting the environs and on mature reflection, I have come to the conclusion that the step might be taken if the city of San Juan del Norte should solicit the Government to take the same and such city afterward facilitate the measure by its active cooperation and assistance. On the other hand, the Government would gain nothing and would continually be menaced by smuggling or be compelled to provide double means for the prevention of such smuggling. In fact, as the San Juan River has so many outlets, it would be very difficult to guard, and as the mouth of the Colorado River is an easy entrance for illicit traffic it would be necessary to have proper officials of recognized honesty in Castillo to examine the boats which might pass with merchandise.
>
> Besides, the commerce of San Juan del Norte is, in itself, an enemy of the Government. This is proven by the various smugglers apprehended in Castillo who have had false invoices given by certain merchants of few scruples, who, for the purpose of carrying on their business, voluntarily lend their aid to, and make themselves accomplices of, those engaged in the illicit traffic as much for this Republic as for our neighbor, Costa Rica. It is time for the Government to dictate an energetic measure which would limit the illicit or unlawful business of these gentlemen who do not hesitate to put their signatures to false invoices.

It is probably true, as alleged by Minister Callejas, that unlawful practices of the character indicated have been carried on to some extent in San Juan del Norte. Alcohol and high-priced liquors have been shipped in kerosene cans, beer bottles, and other packages not used for such purposes on ordinary occasions, and the identity of certain other goods has been concealed in various ways. There is said to be evidence of the occasional nominal sale of one class of goods, the purchaser receiving bills therefor, but with the understanding that such goods are to be held by the vendor as a dummy pawn for contraband goods equaling in value the amounts mentioned in the bills. If the invoices given, for instance, are for twenty packages of a certain article, such packages will not actually be removed, but similar packages containing the more expensive article purchased will be prepared for shipment by the

smuggler, and the invoices mentioned will be presented by him at the custom-house at Castillo.

It is probable, however, that but few, if any, such cases have occurred. It is more likely that the smuggler actually purchases both articles. The cheaper article is then removed to a private dwelling or warehouse and an arrangement made with some outsider to dispose of such goods before the return of the smuggler from the interior. In such case, the merchant may be entirely guiltless of any intention to lend assistance to the dishonest transaction. There is no reason to believe that tricks and devices to beat the custom-house officers are more common in San Juan del Norte than in any other country or port in which smugglers make their purchases.

Nothing is sold in San Juan del Norte that may not lawfully be sold, and merchants having smugglers for customers should not for that reason alone be classed as enemies of the Government. There are men of integrity engaged in trade in the town, and whatever any competitors may have done, these men claim to have given the Government no just cause for complaint. Instead of countenancing the contraband trade, they claim that should the Government resort to harsh measures in cases of established guilt, the effect would be extremely wholesome, not only for the trade of San Juan del Norte, but for that of honest dealers in the interior towns and hamlets who are constantly undersold by less scrupulous competitors.

Eighteen of the persons attending last evening's meeting signed a paper authorizing F. A. Pellas, Charles D. Scott, Ramon Enriquez, Daniel Sacasa, and E. L. D'Souza to act as a committee and prepare a petition praying for the abolishment of the free port upon certain conditions. Mr. D'Souza is a British subject and is one of the town's principal importers; Mr. Sacasa and Mr. Enriquez are Nicaraguans, and each has held the office of governor intendant of San Juan del Norte.

The petition will probably ask that duties be fixed at 20 per cent ad valorem, that such rate shall not be increased for a term of years, that the moneys thus raised shall be solely used for the support of the local government and the improvement of the harbor, that the General Government shall make an additional appropriation for the harbor and river, that duties paid at San Juan del Norte shall be remitted on goods passing through the Castillo custom-house, that the town shall be given the right of self-government, that its citizens shall be permitted to vote for delegates to the Congress and to constitutional conventions, and that the national courts of appeal and review shall be open to litigants in San Juan del Norte. The petition is to be delivered to Señor Guerrera, who will present it to the President.

Mr. D'Souza refused to sign the paper and announced that he would not serve on the committee. Messrs. Bingham, Johnstone, and Bergmann also refused to sign the paper and are opposed to the abolition of the free port. The Americans who signed were Charles D. Scott, Henry de Soto, and H. W. Mallitz. Mr. Scott is postmaster at a salary of $100 per month, Dr. de Soto is port surgeon at a salary of $100 per month, and Mr. Mallitz recently

held an important office under the Nicaraguan Government. The only British subjects to sign were F. E. Keen and Donald Barton, neither of whom is engaged in trade. Mr. Barton is bookkeeper in the Government office and receives a salary of $1,400. Of the Nicaraguans who signed, six are Government officials and employees.

The signers, including Mr. Pellas, paid less than 13 per cent of the commercial tax in 1895. Mr. Pellas, although doing by far the best business in the town, has most of his goods billed through from Europe and the United States to Granada, thus avoiding the payment on such goods of any part of the commercial tax in San Juan del Norte. This naturally gives him a decided advantage over his competitors in San Juan del Norte, as they have no branch houses or connections in the interior to which to consign their goods from the ports of purchase. Their goods, consequently, are consigned to San Juan del Norte, and are subject to the payment of the commercial tax. In case of the sale of such goods to the interior merchants, no part of the commercial tax, as already stated, is remitted at the Castillo custom-house.

Another advantage Mr. Pellas has over his local competitors arises from the fact that the freight rates on goods consigned to San Juan del Norte and afterward shipped to the interior aggregate considerably more than through rates from the United States to Granada. The difference is owing to the competition for the carriage of western Nicaraguan freights, the owners of vessels touching at San Juan del Norte establishing special rates to divert such freights from the Panama route.

The merchants opposed to the abolition of the free port claim that there is no certainty that even should the measure prevail and the duties be established at 20 per cent, they would not be increased within a short period to conform with the duties now collected at Castillo and the Pacific ports. They argue that if it be true that Government aid to San Juan del Norte is withheld because of its free-port character, there would be like opposition to the giving of such aid to the town so long as it enjoyed any special privileges, whether low duties or otherwise. Replying to the argument that even should the duties be uniform throughout the Republic, San Juan del Norte would at least be on an equality with Bluefields and be more prosperous than it is to-day, they say that so far as Mr. Pellas is concerned it is a matter of indifference whether the duties be uniform or not if remitted at Castillo, as his trade is wholly with the interior, but that the trade of the town would suffer in case of any radical change of the tariff. They deny that Bluefields can successfully compete for trade on the San Juan River, and claim that, according to the records at Castillo, the amount of duties remitted on Bluefields goods is too insignificant to notice.

That San Juan del Norte has lost its trade with the Atlantic settlements is attributable, they claim, not to the fact that San Juan del Norte is a free port or to the levying of the commercial tax, but to the fact that within recent years, enterprising American and other merchants have established large stores in Bluefields.

The large and complete stocks of goods carried by Bluefields merchants—the imports into Bluefields amounting in 1895 to $647,500 (United States), while the San Juan del Norte imports for the year ended June 30, 1896, amounted to $139,749.90 (United States)—and the proximity of Bluefields to the settlements north of it enable Bluefields merchants to control the trade in question.

That the commercial tax in San Juan del Norte is equivalent to a duty of 15 per cent is not true. The imports for the year ended June 30, 1895, amounted to $229,459.01 (United States). The commercial tax was $24,000 (Nicaraguan), equivalent, according to local exchange, to $12,000 (United States). The tax, therefore, was less than 5⅓ per cent.

The duties levied in Bluefields were reported in my dispatch of November 15, 1895.* Notwithstanding the payment of these heavy duties, none of which are remitted, the Bluefields merchants have succeeded, with the exception of a few articles, in keeping out the goods of San Juan del Norte from the coast territory north of Bluefields.

The imports consigned to San Juan del Norte during the year ended June 30, 1896, were unusually small in volume and value, as the harbor was without a steam tug for six months.

Of such imports, the Nicaragua Mail Steam Navigation and Trading Company received supplies, machinery, etc., amounting to $13,299.06 (United States), which, under the company's concession, are not subject to the payment of the commercial tax. The imports assessable amounted to $126,450.84 (United States).

As already stated, the commercial tax for the ensuing six months has been fixed at $15,000 (Nicaraguan), or one-third more than it was for the first half of the year. As the apportionment of the commercial tax is based upon the imports during the half year preceding the apportionment, the commercial tax for the year, notwithstanding the small value of the imports, will be less than 10 per cent. Should a duty of 20 per cent be collected, the annual duties, under normal conditions, would amount to $50,000 (United States).

The opponents of the measure to abolish the free port suggest that, inasmuch as the Government has never appropriated a dollar for either rivers, harbors, or light-houses on the Atlantic coast, there is grave reason to apprehend that no great haste would be made to inaugurate such work, and that the annual surplus of $35,000 (United States) might find its way to Managua. In this connection, it is suggested that between January 1, 1861, and November 30, 1869, the sum of $108,000 was taken from the municipal treasury of San Juan del Norte by the General Government for the maintenance of navigation at the port, no part of which has ever been expended for such purpose, nor has any portion thereof been returned to San Juan del Norte.

The merchants also fear that, in case of the abolition of the free port, the duties on liquors and cigars would eventually be made prohibitive. In

*See CONSULAR REPORTS No. 184 (January, 1896), p. 122.

case of the construction of the canal and the building up of a city at the mouth of the San Juan, the trade in such articles alone, they claim, would be of considerable importance. On the other hand, it is believed by many that even should the canal be built, most of the population of the town would live near the mouths of the river and the canal and not in the free zone.

As bearing upon the suggestion that Great Britain would not object to the proposed change should the British merchants living in San Juan del Norte advocate the change, the opposition declare that the action of two or three merchants in San Jual del Norte can not bind either Great Britain or the people of San Juan del Norte not represented at the meeting, and they inquire why the common people, who eventually pay every penny of the commercial tax on goods consumed in the free-port town and would have to pay every penny of the increased tax, were not invited to attend a meeting in which they had as much interest and as much right to be heard as any merchant or Government employee.

The British residents profess to find much encouragement in the following extract from the Emperor of Austria's opinion:

The Government of the Republic of Nicaragua disputes the right of Her Britannic Majesty's Government to take part in the affairs relating to the Mosquito Indians and to the free port of San Juan del Norte (Greytown) or to come forward as complainant in the present litigation, inasmuch as such proceeding would involve an unauthorized intermeddling with the internal concerns of Nicaragua, and a reassertion contrary to treaty of the relinquished protectorate over Mosquito. This contention against England's legitimation ad causam can not be pronounced well founded.

Then, in regard to the port of San Juan del Norte (Greytown), the Republic of Nicaragua, in Article VII of the Managua treaty, concluded with England, undertook the engagement to constitute and declare it a free port; and such constitution did ensue by Presidential decree of the 23d of November, 1860. But England has a treaty right to insist also that that constitution and declaration should not be merely nominal, but that the Government of the Republic of Nicaragua should not enact any provisions and regulations incompatible with the essence and character of a free port.

Now, if English merchants settled in Greytown or trading thither appeal to the protection and interposition of the English Government against measures on the part of the Nicaraguan Government which are prejudicial to the free-port character of Greytown, and thereby to their commercial interests, and if subjects of other states join in such steps, there would be nothing herein contrary to the rules of international law or to the ordinary practice generally acknowledged as admissible.

While public opinion appears to be evenly divided upon the free-port question, there are not a dozen men in town who do not believe that litigants should have the right of appeal to the supreme court of the Republic, and that the people should elect their own officers, regulate local taxes, control public expenditures, and be represented in the National Congress. It would seem that these privileges might properly be asked for without reference to the free-port question.

THOMAS O'HARA,

SAN JUAN DEL NORTE, *July 12, 1896.* *Consul.*

UNITED STATES ENTERPRISES IN EASTERN NICARAGUA.

I inclose herewith clippings from the Bluefields Recorder of June 6 in relation to contemplated manufactures at Bluefields and Pearl Lagoon and to the purchase of new steamers for the Atlantic coast trade in Nicaragua. The Lasché concession mentioned in one of the extracts was reported by me August 24, 1895.*

THOMAS O'HARA,

SAN JUAN DEL NORTE, *June 17, 1896.* *Consul.*

[Extracts from the Bluefields Recorder, June 6, 1896.]

We have always wondered at the practice which obtains here, as well as at several other ports on this coast, of exporting cocoanuts after separating them from the husk. Yet the husk is more valuable than the fruit itself. It serves for a multitude of purposes. The fiber is manufactured into coir, a valuable material extensively used in rope making; the pulpy part binding the fibers is used in the fabrication of cofferdam, a substance extensively used in modern shipbuilding; and that it is used in making mats, brooms, and other household articles is very well known. Towns can even be paved with cocoanut husks; witness, Bocas del Toro, the elasticity of whose thoroughfares strikes all visitors to that important banana center. This valuable product, hitherto thrown away in such large quantities, will be utilized in future. We understand that Mr. Hunter, a capitalist of Minneapolis, Minn., is shortly expected here, amply provided with funds to start several new industries. Among the projects he has in view and which will be given practical application here, is a factory for the manufacture of mats, brooms, brushes, etc., of cocoanut fiber, of which we have here an unlimited supply. Mr. Hunter brings also with him an ice plant on the most improved principle. We learn that while the fiber factory will be located at Pearl Lagoon, the ice-making machine will be located here. Mr. Hunter is now in Chicago, engaging experienced workmen for these factories, which, by opening up new industries, will not fail to have a beneficent influence on the country. We hail the advent of Mr. Hunter with gratification, and, in anticipation, wish him success in the new fields he is about to exploit.

"It never rains, but it pours." The excursion of the *Herbert* and the *Carazo* to Davy Jones's locker, seems to have given fresh impetus to the matter of coastal steam navigation. Shortly after the disappearance from the scene of these old timers, Mr. Pellas's *Rosita* came forward. A few weeks ago, it was the turn of the *Lucy B.*, as "trim and taut" a little craft as ever plied along these coasts. But these hail from San Juan del Norte. We are, however, not to be behindhand, and Bluefields will soon have her own fleet of coasting steamers. By virtue of certain concessions granted by the Government to Mr. Lasché, duly ratified by Congress, the latter agreed, among other things, to put on the coasting trade a steamer of the size of the late *Carazo*. From advices received, this will arrive here about the end of July. Messrs. Hoadley, Ingalls & Co. will also receive a steamer here about the middle of September, to replace the *Herbert*, while the New Orleans and Central American Trading Company momentarily expect their composite steamer for the Princapulca trade. With such facilities for transportation from and to all parts of this coast, the boundless resources of the country should be developed more systematically, so that the new steamers which shall be employed in the carrying trade may prove remunerative investments. In this connection, we would suggest that the advantage of dispatching a steamer regularly to Port Limon and

*See CONSULAR REPORTS No 182 (November, 1895), p 388.

Colon should not be lost sight of; at present, we are altogether without communication with these important seaports, whence a traveler can proceed anywhere without difficulty and at short notice.

SUPPLEMENTARY REPORT.

As reported in my dispatch of August 24, 1895, Mr. J. Lasché, representing the South Dakota and Central American Trading Company, of South Dakota, agreed with the Government of Nicaragua a year ago to provide a steamer for regular trade between San Juan del Norte and Cape Gracias-á-Dios, calling at all intermediate ports, in consideration of which he was to receive from the Government 25,000 hectares (61,775 acres) of land in alternate lots of 500 manzanas (916⅔-acres) each at any point on the Atlantic coast of Nicaragua.

The contract provided that the steamer should be fitted with all modern appliances and be available for Government service in cases of emergency.

I inclose herewith a newspaper extract describing the little vessel which has been secured to earn the grant of 61,775 acres.

THOMAS O'HARA,

SAN JUAN DEL NORTE, *July 22, 1896.* *Consul.*

[From the Bluefields Recorder, July 11, 1896.]

ARRIVAL OF THE STEAMER "SAGA."

Last Sunday morning the early risers whose first business is to cast an eye at the Bluff, were surprised to see anchored there a strange craft, flying a pennon bearing a white Maltese star on a red ground. The newcomer, from the distance, had a yacht-like appearance, and to many the idea occurred that Bluefields had been included in the itinerary of some Iselin or Dunraven. It soon after transpired that the vessel was one of the new steamers for our coasting trade, that she was called the *Saga*, and is owned by Mr. J. Lasché, of South Dakota, who, in return for certain valuable land concessions made by the Government to a company represented by him, had agreed to put a steamer on the coasting trade.

The *Saga* is of 129 tons burthen net, and was built at Goteborg, Sweden, in 1876. She is in first-class condition, and under command of Captain Carlson made the trip from Copenhagen to this port in thirty days. She was thoroughly refitted prior to her dispatch, and has been provided with new and improved boilers and machinery, as well as twin propellers. But the great hit of the *Saga* is her passenger accommodation. She is provided with ten commodious staterooms, luxuriously upholstered in plush and fitted as those of any transatlantic liner; on deck, a cosy smoking room invites the lounger, while the spacious dining room is coolly situated forward.

The *Saga* will very shortly be attired in white and baptized the *Blanca*, in honor of Señora Blanca de Zelaya, the esteemed and sympathetic spouse of His Excellency the President of the Republic, after which her itinerary will be decided upon. It is to be hoped that her owners will include Port Limon, Bocas del Toro, and Colon on her time tables. A vessel of the type of the *Saga* would be a welcome acquisition on the trade between this and the above-mentioned ports, which she would foster; for it is a fact which can not be gainsaid, that the want of rapid communication between Colon, the intermediate ports, and Bluefields is the main impediment to a large traffic between them. A monthly trip to Colon and back would be very popular, and many would avail themselves of such a convenient opportunity as the *Blanca* to visit Limon, Bocas, and Colon.

PROPOSED CANAL TO CONNECT LAGOONS.

A contract has been let for the digging of a canal to connect the waters of Pearl Lagoon and Bluefields Lagoon. All freights between Bluefields and the settlements on Pearl Lagoon are now carried by coasting vessels. Upon the construction of the canal, the outside passage may be avoided, and vessels of 4½-feet draft may trade anywhere north of Bluefields for a distance of 55 miles without touching the Atlantic.

It is said that there are choice banana lands on the west shore of Pearl Lagoon.

THOMAS O'HARA,

SAN JUAN DEL NORTE, *July 22, 1896.* *Consul.*

[From the Bluefields Recorder, June 27, 1896.]

PEARL LAGOON CANAL.

We were unavoidably prevented from publishing in our last issue the interesting news of the contract recently entered into between the governor intendant, on behalf of the Government, and Mr. Frank Field, for the cutting of a waterway, whereby access to Pearl Lagoon could be obtained from Bluefields through Pine Creek, a splendid water course, whose advantages have never been estimated at their worth. The proposed canal will be from the head waters of Pine Lagoon to the head waters of Pearl Lagoon, a distance of about 3 miles, but only three-quarters of terra firma will have to be cut by the concessionnaire, the balance of the stretch running through marshes which will only be deepened, trimmed, and rendered navigable.

The proposed canal will be 24 feet wide and 5 feet deep, and consequently will be accessible to all the local craft, and is to be completed and opened to traffic six months after the signing of the contract. As compensation, the concessionnaire will be retributed partly in specie and partly by a grant of land in that most-favored district of the Atlantic coast, which will be put under cultivation without delay. We understand that the necessary dredging materials have been ordered. On the Pine Lagoon end, the work will be executed by means of a dredge; on the Pearl Lagoon end, a siphon apparatus is already at work.

This important enterprise, brought to a head by the energetic spirit of General Reyes, will have a marked influence on the future of that magnificent district of Pearl Lagoon, where thousands of acres of fertile lands have remained undeveloped through the want of capital and a rapid means of internal communication. We have it on the best authority that on the parcours of Pine Creek—a water course as easily navigated as the Escondido by the class of vessels calling here for fruit—and throughout the entire district, are to be found lands of unsurpassed fertility, admirably fitted for the cultivation not only of our own staple, albeit ephemeral product—the banana—but almost any other of a more valuable and permanent nature.

The contract just signed opens brilliant vistas to Pearl Lagoon, and there is reason to believe that the day is not far distant when it will be as easy for the fruiters to go up the Pine River as they do the Escondido to load bananas grown on plantations at Pearl Lagoon and its immediate vicinity.

IMPROVEMENT OF BLUEFIELDS HARBOR.

Referring to my dispatch of May 29,* I inclose herewith an extract from the Bluefields Recorder in relation to the improvement of Bluefields harbor.

THOMAS O'HARA,

SAN JUAN DEL NORTE, *July 22, 1896.* *Consul.*

[From the Bluefields Recorder, July 4, 1896.]

PROSPECTIVE COMMUNICATION WITH EUROPEAN PORTS.

We were recently shown a communication, emanating from the general agent of the Hamburg-American Packet Company at St. Thomas, Danish West Indies—the headquarters of that important company in the Caribbean Sea—in which it is stated that that company would willingly include Bluefields in its coastal itinerary, provided vessels of their West Indian line would not experience any difficulty or danger in coming to port. We understand that, for the information of the directors of the Hamburg-American Packet Company, a series of maps and diagrams, showing the situation of the harbor, the depth of water at the Bluff and on the bar, are being drawn for their information, as well as other data, whereby they would be enabled to form an accurate estimate of the possibilities of trade, and arrive at a decision advantageous to both parties.

Our readers are, no doubt, aware that the Hamburg-American Packet Company is one of the leading navigation companies of the world, owning the largest fleet of steamers for traffic in the West Indies and the ports on this coast of the American continent from Venezuela to Port Limon. If encouraged, the calling here of the steamers of such a powerful company will have a most beneficent influence on our trade and commerce, and one of the results thereof would be substantial economic advantages to the community.

The desire expressed by the authorities of the Hamburg-American Packet Company should be an incentive to give practical form to the long-mooted project of dredging the bar at the mouth of the harbor. This work, whenever carried out, will contribute more toward the development, expansion, and welfare of this section of the Republic than the execution of half a dozen other minor projects. With a harbor easily accessible to ocean steamers, and where they could ride in safety, the future of this department would be assured.

NEW INDUSTRIES AT CHIHUAHUA.

Within the last two months two large and promising industries have been established in the city of Chihuahua, which will add greatly to the commercial importance of this, the northern end of the Republic. The first of these is a brewery, with a capacity of 35,000 barrels per annum, equipped with the latest modern American machinery and an extensive cold-storage and refrigerating plant, which will supply ice to Chihuahua, as well as the neighboring towns. The company proposes to establish branch supply depots and will erect cold-storage houses for the better keeping of the beer in all the principal towns in Mexico, as well as the bordering towns in Texas and New Mexico. The company is known as the Compañia Cerveceria Chihuahua (Chihuahua Beer Company). It is a Mexican stock company,

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*Printed in CONSULAR REPORTS No. 190 (July, 1896), p. 467.

with a paid-up capital of $200,000, and the stockholders are among the most progressive and wealthy business men in this State. The cost of the plant, including machinery, will be $180,000 (Mexican). The first year they propose making 25,000 barrels of beer, the estimated cost to be $250,000, or $10 (Mexican) per barrel. It will be sold to the saloon men at $20 per barrel, the saloons selling at 10 cents per glass, giving the saloons a net profit of $15 per barrel. The present price of a glass of beer being 25 cents, the cut in the price, it is thought, will greatly increase the consumption. It is expected that the company will have their beer on the market about New Year's. The total amount of beer sold in the State of Chihuahua heretofore never exceeded $50,000 (Mexican) per annum. The greater portion of the beer now consumed is imported from St. Louis, Mo.

The other industry is an establishment similar to the large packing and beef-killing houses at Chicago. It is also a stock company, composed of some of the largest cattle and ranch men in the Republic, whose wealth runs up into the millions. During the past spring, and since the admission of Mexican cattle into the United States, there have been shipped from this State about 50,000 head of cattle. These shipments have convinced the owners of stock in Mexico that if American stockmen can ship Mexican cattle 1,854 miles by rail to Chicago with a profit, there is money to be made by shipping direct to Europe via Tampico, the cost of transportation being lower than the rate to Chicago. This fact has given the impetus to this business in Chihuahua. The company proposes shipping live beef cattle, dressed beef, and canned beef for the European trade.

The directors of the company recently paid a visit to Tampico, where they inspected a large cold-storage plant with a view to purchase. Dressed beef, it is claimed, can be placed on the European market by this company at figures that defy competition by Chicago houses. Hamburg is the objective point for the sale of the Mexican product. It is contended that there is a great opportunity for this company, owing to their ability to put on the market a cheap grade of beef at about half the cost of the present price of American beef, with a fair margin of profit. The cattle at present may not be as highly bred as those from the United States, but the great difference in the price is expected to overcome this objection. Besides, in a comparatively short time, the cattle of Mexico, it is hoped, will be second to none, as all stockmen are paying special attention to crossing with other and better breeds. While this enterprise may be termed an experiment, it is one that apparently justifies the hopes of success. Mexico has many advantages for such an industry, if properly conducted—the vast and boundless plains, an even temperature, the general good health of all live stock (there being no disease of any kind among the cattle in Chihuahua), cheap lands, cheap labor, and cheap transportation. Good ranch or grazing land in any quantity can be had for 25 cents (Mexican) per acre. The Mexican cowboy receives from $8 to $10 per month and finds himself. Rail transportation to the seaboard is very low; the rate to Europe is correspondingly low, owing

to the competition of three lines of steamers to Europe, viz, the Hamburg-American Line, the Hamburg, Antwerp, and Havre Line, and the Prince Line. The harbor at Tampico is one of the finest in the world, with an average depth of 40 feet.

Lands so long considered of no practical value can be profitably utilized for stock raising. Heretofore, there was no inducement for capital to invest in stock raising in Chihuahua, as outside of the City of Mexico there was absolutely no market for cattle, and there only to a limited extent.

R. M. BURKE,

CHIHUAHUA, *July 20, 1896.* *Consul.*

VALUABLE WOODS OF PARAGUAY.

Of next importance to the yerba industry in this country, is its timber. Immense forests of various classes of woods are to be met with in all parts of Paraguay, whether it be inland or on the shores of the two greater rivers, the Alto Parana and Paraguay. These woods are chiefly exported in the shape of squared logs and are transported considerable distances, often as much as 40 or 50 miles from the interior to the railway, or sent down the rivers in rafts or large barges. They are now finding ready markets in Rosario, Buenos Ayres, Montevideo, and Europe, more especially in Germany, Belgium, and France. They may be divided into two classes, viz, hard woods (madera de ley), which do not float, and soft woods, whose specific gravity, as a rule, is less than that of water.

The hard woods are chiefly used by the railways for sleepers, bridge work, and general railway construction; the lighter woods, with the exception of cedar and petereby-negro, are sawn up into planks, chiefly in Asuncion, and in South America, to a great extent, take the place of pine, which wood, being imported from Europe and North America, is expensive.

The hard woods of this country will compare favorably with any wood in the world in durability and strength. It is well known that some of them, after being under ground or in water from fifty to seventy years, or even longer, are found to be perfectly sound, with only a slight superficial corrosion, and for this reason, there are now large orders from Buenos Ayres and Montevideo for wood of this class for piles, which can be supplied at a less cost than pitch or creosoted pine. There are other hard woods, close-grained and yet elastic, which compare favorably with the English oak and the American hickory, and others, again, which resist the wood borers and are uninflammable.

As regards the soft woods, the chief export is cedar (cedro). Paraguayan cedar is far superior and commands a higher price than the cedar found in the northern parts of the Argentine Republic. It is richer in color and more durable than its bigger-growing brothers to be found in Tucuman and in the Argentine and Brazilian Misiones. The best cedar hitherto exported to

Europe has come from Cuba, but the supply from there is now practically exhausted and the revolution has put an entire stop to its exportation for the present.

Petereby-negro is a wood whose value it is difficult to overestimate. It takes a fine polish, is handsome for furniture, and is of great durability. It is highly scented and extremely light. Some of the most beautiful pieces of furniture I have seen have been made of this wood. In appearance it is not unlike American walnut, and it is also to be had with a wavy grain (crespo).

Among the various palms which are to be found in great quantities in the Paraguayan Chaco, I must not forget to mention the red and black palms. They are extremely hard and will often turn the edge of the best-tempered ax. The black palm makes a magnificent veneer, taking a beautiful polish, and when in water or under ground it is practically everlasting.

Large quantities of a small brush-like tree, called espanillo, and another called algaroba (the latter scarce) are cut up into posts and sent to Buenos Ayres for fencing, and although sometimes they are not more than 2 or 3 inches in diameter, they will last under ground forty or fifty years.

I give a list of the principal woods and some of their various uses:

Curupay.—A hard, red, heavy wood of great strength, lasting for many years under ground or in water. It is chiefly of this wood that piles for docks and bridges are made, and a large demand exists for it for sleepers. The bark is used for tanning. Its price, put in Asuncion, is 45 cents (gold), 34 inches (Spanish yard) by 10 by 10.

Curupay-ria.—A species of curupay of greater weight-bearing power, but inclined to crack when exposed to the sun.

Urunday-mi.—All that applies to curupay applies to this; also the price.

Urunday-pará.—A hard wood of little or no value. I insert this as a warning to purchasers not to confound it with urunday-mi.

Tinibó.—A light wood, not unlike cedar in grain, and as it often grows to an immense size, it is much used for dugout canoes and troughs for water and treacle. It is used also for shingles for roofing. But little of this wood is exported.

Tatajibá (*Sp-mora*).—A hard, yellow wood, used for sleepers, but, in my opinion, overrated on account of its decaying when in moist earth.

Tataná.—A handsome yellow hard wood. It makes an excellent veneer, is very durable under ground, and resists insects and fire. It would be difficult to overestimate this wood. It is much sought after by shipbuilders for shoulders and stem and stern posts.

Guayabi.—Very flexible and elastic; greatly used here for bullock yokes and ax handles, being preferred to the hickory of North America.

Petereby blanco.—A light wood; of little use except when cut up for rough boxes.

Petereby negro.—One of the best woods in the country. It is much used for masts on account of its great length. The price of this, put in Asuncion, is 55 cents (gold), 34 by 10 by 10 inches.

Palo santo.—Only found in the Paraguayan Chaco. Much used for its chemical properties and for fancy work in lathe turning.

Quebracho negro.—The king of hard woods. The signification of the name is "ax breaker." There is no wood known to surpass it for durability and longevity either in earth or water. It is sent to Europe for tanning purposes. It fetches as much as $10 (gold) a ton in Buenos Ayres.

Quebracho blanco.—Has almost the same properties as the other, but is of no use for tanning. A tonic is made from the bark, said to be beneficial in pulmonary diseases.

Lapacho.—Erroneously supposed to be what is known in Brazil and other parts as greenheart. Immense quantities of this are shipped to Buenos Ayres for railway and shipbuilding purposes. It is a greenish-yellow wood, which does not readily crack and is of immense strength. It is not good for piles or damp soil. The "crespo" or curled class has a beautiful appearance, and makes handsome, but heavy, furniture. I would warn purchasers of its extreme inflammability. Its price in Asuncion is 35 cents (gold), 34 by 10 by 10 inches.

Ibyrapyté.—An overrated wood much exported to Buenos Ayres for railway carriage and shipbuilding. It is heavy and hard and impervious to the direct action of water, but, unless very well seasoned, warps considerably.

Iviraró (bitter).—One of the best woods of the country; close-grained, not unlike oak in appearance. It has this great advantage—it does not crack and is invariably sound in its heart. This wood is used by the natives for the hubs or boxes of wheels and fellies, and these native-made wheels are, as a rule, made without iron tires, proving the extreme hardness and durability of the wood, for the roads in Paraguay are of the roughest description. This wood I can with safety recommend to shipbuilders, carriage makers, and carpenters; it is durable, strong, and easily worked. The price, put in Asuncion, is 55 cents (gold), 34 by 10 by 10 inches.

Iviraró-mi.—A fine, closer-grained class of the above, somewhat scarce; therefore, commanding a high price. It is invaluable for engraving blocks.

Incienso.—The sap of this is the incense of commerce, but for some reason there is no trade in it, except for local purposes. Of late there has been a demand for the wood for parquet flooring, on account of its scent, durability, and hardness. Price, 45 cents (gold), 34 by 10 by 10 inches, but seldom to be had more than 12 by 12 inches square.

Palo blanco.—One of the commonest and tallest trees of Paraguay. This wood takes its name from its bark and not from the color of the wood, which is whitish yellow, with a strain of black. Although heavy, it is largely used here and in Buenos Ayres instead of pine. It is practically everlasting, when not exposed to wind and weather. It has this great advantage—dry rot and borers never touch it. It is easily worked. Price, 35 cents (gold).

Cedro.—The price of this wood is rising in leaps and bounds. It is just now particularly in demand on account of the Cuban revolution, and it would be difficult to exaggerate its value in the immediate future, as the

quantity now left is very limited. For durability and for retaining its scent it is thought to be superior to any other cedar hitherto used in the manufacture of cigar boxes and receptacles for the preservation of apparel from the depredations of insects. The price, put in Asuncion, is 60 cents (gold), 34 by 10 by 10 inches.

I have delayed forwarding this report on account of the nonarrival of samples of the woods I describe. The Minister of the Interior ordered samples to be sent to the consulate free of charge, but as yet they have not been delivered.

SAMUEL W. THOMÉ,

ASUNCION, *June 5, 1896.* *Consul.*

UNITED STATES TRADE WITH SANTOS.

Since I assumed charge of this consulate, October 1, 1893, the rates of exchange have been from 4 to nearly 6 milreis (paper) to the dollar. It was thought that the unsettled state of the country during the revolution of September 6, 1893, to March 13, 1894, was the cause of this low exchange; but as it got no better afterwards, but went even lower than during the revolution, it was said that the revolution in Rio Grande do Sul was the cause. In August, 1895, the revolution in Rio Grande do Sul was ended. This did not better exchange. It was then held that the great amount of paper money in circulation, in excess of the amount of gold held by the Government as a guaranty, was the cause, and that the Government was only running upon its credit abroad; and some assigned as a reason, that the different political parties in the country—the Monarchists, the Parliamentistas, and Separatistas—threatened the present form of government; but time and observation have convinced me that the foreign money speculators in this country and in Europe are the main cause. This cause not only affects the cost of commodities here, but it greatly affects the interests of our manufacturers, exporters, and shipowners who deal with this country. I have heard no complaints by foreigners against the failure of this Republic in meeting its obligations or its ability to manage its own affairs, and an evidence of the integrity of the Republic in discharging its debts is given in the fact that manufacturers in Germany, France, and England send goods here on three and six months' credit. Another evidence is, that the capitalists of those countries own and control banks here.

Take the Santos coffee trade, for instance, for the year 1895. One-third of the coffee shipped from this port went to the United States at a net cost of at least $17,000,000 and paid for by American importers through London banks, which got the benefit of an enormous sum as interest, which Americans might have secured for themselves. Neither the Commercial Association of this city nor of São Paulo, nor even the custom-house here, seem to be able, at this time, to furnish the amount of American exports for 1895 direct from the United States to this port. But estimating our exports

to this city in the same ratio of our imports from Santos to the whole amount of American imports from Brazil, it can be seen that our shipments to Santos were not much more than $3,000,000, which gives a balance of $14,000,000 in favor of Santos. This balance nearly equals our whole export business to Brazil for that year.

The commercial associations of this city and São Paulo present the following figures (which I have reduced to United States money, allowing 5 milreis to the dollar) as to the amount of bills discounted here by the different foreign banks and branches of the same:

London and Brazilian Bank	$314,417.32
British Bank of South America	158,622.32
English Bank of Rio de Janeiro	266,713.76
Brazilianische Bank for Deutschland	525,967.97
Banking house of Robertson & Co	952,690.44
Banking house of Dumont & Co	1,496,073.97

This makes the total amount discounted for the year 1895, $3,714,485.78, which more than covers the $3,000,000 paid to our exporters for goods sent to this port. This gives a great advantage to England, Germany, and France, who got and paid for most of their goods by taking coffee in exchange and carrying the same in their own ships; hence, they send very few bills to Santos that have to be discounted, the business of the foreign banks here being settled for by the home banks. The rate of exchange is, therefore, fixed in England, which does the greater business here. It does not appear that the rates fixed by England prejudice France and Germany in the least.

An American bank here would do more toward making the United States a money center for the benefit of our commerce than anything else; for, as it is, England is being built up at the expense of the United States. Nearly all our goods are brought here in foreign bottoms and nearly all the coffee is carried to the United States in the same. The freight for the coffee alone from this port amounts to nearly $300,000, which goes into the pockets of the English, French, and German shipowners.

Unless something is done for ourselves in the matter of having our own banks for the benefit of our shipowners trading with Brazil, it is only a question of a short time when our sailing vessels will not be able to come to this country.

I have again to call attention to the fact that the language of this country is Portuguese, and not Spanish. Advertisements sent to this country should be in the language of the country; no attention is paid to Spanish literature. The most essential thing for extending our trade in this country, however, is an American bank.

HENRY C. SMITH,

SANTOS, *July 20, 1896.* *Consul.*

TRANSPORTATION OF BUTTER IN REFRIGERATOR SHIPS.

I inclose a printed copy (in pamphlet form) of a translation made by Messrs. James Currie & Co., shipowners, Leith, of a "Memorandum issued by the Danish Government laboratory regarding the effects of refrigeration on butter" in the two Leith steamers belonging to the above company, which have been fitted up with refrigerators in their holds for the conveyance of perishable goods, particularly butter, and which ply between Copenhagen and Leith. In June of the present year, the Danish Government—ever studious of such matters as may affect the interests of the dairy farmers of the country, whose fine butter is one of the principal exports of Denmark—sent a representative of the Government laboratory, Mr. E. Holm, on one of the vessels on the voyage from Copenhagen to Leith to test the value and working of the refrigerating system adopted on the two vessels. Mr. Holm took thermometrical readings of the holds (refrigerated and unrefrigerated) of the vessel and also of the butter in them.

From a table in the pamphlet, it will be seen that the temperature of the refrigerated holds sank steadily during the entire voyage from Copenhagen to Leith, and that it was all the time much under that of the atmosphere and sea. A second table gives the temperature of the butter upon the arrival of the steamer at Leith, where that which was stowed in the refrigerated hold was found, in every case, to have a very much lower temperature than it had when it was shipped at Copenhagen; but the reverse was the case with that stowed in the unrefrigerated hold.

The pamphlet contains a description of the method of refrigeration adopted on the two steamers.

ROBERT J. MACBRIDE,

LEITH (EDINBURGH), *July 22, 1896.* *Consul.*

[Translation.]

MEMORANDUM ISSUED BY THE DANISH GOVERNMENT LABORATORY REGARDING THE EFFECTS OF REFRIGERATION ON BUTTER IN THE LEITH STEAMERS "RONA" AND "THORSA."

As will probably be known from the press (see, for example, Maelkeritidende, No. 23, of June 5 last), the Leith, Hull, and Hamburg Steam Packet Company, owners of the steam line between Copenhagen and Leith, carried on by the steamers *Rona* and *Thorsa*, have fitted up refrigerators in the holds of their vessels for perishable goods. From the description that appeared of the installation in these vessels, the refrigeration seemed to be very effective; and as the laboratory regards refrigerated holds as an essential condition of a successful butter-export trade, it was judged desirable to follow up the observations of the temperature in ships' holds made in 1886, and the experiments in the forwarding of butter, both in refrigerated and in unrefrigerated condition, by conducting similar investigations now, in order to gain information as to the new transport conditions, and to ascertain whether the changes in temperature and consistency, observed in butter while in the laboratory's refrigerated store, would also take place in the refrigerated holds.

On conferring with the firm of C. K. Hansen, which represents the company here, the laboratory was readily given an opportunity of conducting such investigations, and the laboratory's assistant, Mr. E. Holm, took a voyage with the *Rona* from Copenhagen to Leith, in June last, during which time he had the fullest opportunity of making the desired investigations.

Thermometrical readings were taken of the ships' holds (refrigerated and unrefrigerated), and also of the butter stowed in these holds, the temperature of the atmosphere and of the sea being taken at the same time. These readings are given in the following tables and require a few words of explanation.

Table I.

Date.	Refrigerated hold furthest aft.	Refrigerated hold furthest forward.		Open air.	Sea.	Place of observation.	Weather.
		Middle of hold.	Bottom of hold.				
June 12.	*Degrees.**	*Degrees.**	*Degrees.**	*Degrees.**	*Degrees.**		
12.01 a. m.	.....	59	54.1	.....	.....	Copenhagen..	.....
8 a. m.	.....	54.1	51.1	65.3	65.8	Cattegat.....	Clear and calm.
4 p. m.	46.6	50.9	50	66.2	64.9	Skagerak.....	Do.
June 13.							
12.01 a. m.	45.9	49.1	48.2	.....	.....	.....do.....	.....
8 a. m.	45	45.5	44.4	52.7	55.6	North Sea.....	Foggy and calm.
4 p. m.	43.2	43.3	42.4	55.4	55.6	.....do.....	Clear and calm
June 14.							
12.01 a. m.	42.8	42.8	41.9	.....	.....	.....do.....	.....
8 a. m.	41.4	41	40.1	51.8	52.7	.....do.....	Foggy and calm.
4 p. m.	39.6	40.1	39.2	.....	.....	.....do.....	.....

* Fahrenheit.

In Table I are given the temperatures that were taken in the ship's refrigerated holds, which were both forward and aft, as well as the temperatures of the atmosphere and the sea at the places and during the weather indicated in the last two columns. From the figures in Table I it is seen that the temperature of the refrigerated holds sank steadily during the whole voyage, and that it was all the time very much under both that of the atmosphere and of the sea. The temperatures were taken on thermometers that were lowered into tubes run down through the deck into the refrigerated hold. But as the hold during the voyage was filled with butter up to the deck, the thermometers could be let down only a few inches into the hold; consequently, it was the temperature close to the deck that was taken, but, as will be explained later, since the refrigeration was effected at the ceiling of the hold, the mean temperature would probably be a little higher than indicated here. In order to confirm this, the temperature was taken in the hold itself, both 1 foot from the ceiling and 1 foot from the floor. But in order to do this, it was necessary, at great inconvenience, to go down into the hold, and consequently the observations were only taken twice (in the mizzen hold), namely, on June 13, 4 p. m., when the temperature was 45.3° F. and 45° F. (the thermometer in the tube showing at the same time 43.2° F.), and on June 14, 8 a. m., when it was 43.5° F. and 42.3° F. (while in the tube it was 41.4° F.). Judging from this, it seems as if the mean temperature in the hold must have been about 2° F. higher than indicated in Table I. But even with this correction of the figures, the refrigeration must be described as exceptionally good.

In order to be able to make a personal observation of the effect of the refrigeration on the butter, the laboratory made application to Mr. Esmann's agency, in Copenhagen, for permission to examine the temperature of the butter he was sending with the *Rona*. The firm

readily placed at the disposal of the laboratory ten casks of butter, which were so chosen that every pair came from the same dairy and were, as nearly as possible, similar as regards temperature, consistency, and quality. Of each pair, one cask was placed in the refrigerated mizzen hold, the other in an unrefrigerated hold, each of these places having, consequently, five of the casks that were to be observed. The temperature of these ten casks was taken (both at the center and at the surface) immediately before shipment in Copenhagen and shortly before arrival in Leith, where the consistency of the butter was judged. These temperatures and judgments are given in Table II.

The casks in Table II are marked with the letters A–E, the casks marked A_1, B_1, etc., being those stowed in the refrigerated hold; those marked A_2, B_2, etc., being those in the unrefrigerated hold. A_1 and A_2 came from the same dairy, in like manner B_1 and B_2, etc. The casks marked A–D had not been subjected to any refrigeration either in the dairies or during the journey to Copenhagen; E_1 and E_2, however, had been standing in the refrigerated chamber in the dairy, and had been shipped immediately on arrival at Copenhagen, the railway journey for these two casks having only been about 2 miles (Danish).

Taking first the figures in the first two columns in Table II, those in the upper and lower halves show that at Copenhagen the butter stowed in the refrigerated hold was almost of the same temperature as that stowed in the warm hold. The average temperature for the five casks in each place was 59.6° F. at the center of the cask, and 62.5° F. at the surface, which may be regarded as normal for our summer butter in the warm season, when it has not been subjected to refrigeration in the dairy. The third column shows likewise that the consistency was the same for every two casks.

Table II.

Description.	In Copenhagen.			In Leith.		
	Temperature of butter.		Consistency of butter at center.	Temperature of butter.		Consistency of butter at center.
	At center of casks.	At surface of casks.		At center of casks.	At surface of casks.	
In refrigerated hold.	*Degrees.**	*Degrees.**		*Degrees.**	*Degrees.**	
Cask A_1	62.1	63.9	Normal	52.3	47.3	Very firm.
Cask B_1	60.3	63.5	do	52.2	47.3	Do.
Cask C_1	59.9	63	Soft	53.1	50.5	Do.
Cask D_1	61.2	63.5	Normal	52.2	49.1	Do.
Cask E_1	57.2	59.5	Firm	53.6	51.8	Firm.
Average	60.1	62.7		52.7	49.2	
In unrefrigerated hold.						
Cask A_2	61.3	62.6	Normal	61.7	60.4	Soft.
Cask B_2	59.5	63	do	61.3	60.8	Very soft.
Cask C_2	58.8	63	Soft	62.4	59.9	Soft.
Cask D_2	61.2	63.9	Normal	62.4	61.3	Do.
Cask E_2	55.4	59	Firm	60.8	60.8	Very soft.
Average	59.2	62.3		61.7	60.6	

* Fahrenheit.

Looking next at the figures showing the temperature of the butter in Leith, we find a very great difference between the upper and lower portions of the table. The butter which was stowed in the refrigerated hold had, in ever case, a very much lower temperature in Leith than in Copenhagen. At the center of the casks the temperature on the average for the five marks sank about 7° F., which, in view of butter being a bad conductor of heat, indicates a very effective refrigeration. At the surface of the casks the temperature had, of course, sunk still lower, namely, over 13° F. on the average. Cask E_1 had cooled least, but with regard

to this it must be remarked that, in loading, it had been stowed in the center of the casks in the hold, while the other four casks stood out free from the rest of the cargo. But even E_1 was well cooled, and this proves that the refrigeration penetrated the whole cargo. As will be seen from the remarks about the consistency of the butter in the last column of Table II, the effect of the refrigeration was that all the butter on arrival in Scotland was particularly firm, although, when shipped at Copenhagen, it was of the usual half-soft condition of our summer butter—even cask C_1, which was "soft" at shipment, being "very firm" on arrival at Leith. The remark "very firm" must on no account be understood to mean that the butter was hard or had acquired an unduly firm character. In order that a comparison can be made, it may be mentioned that while the butter on shipment at Copenhagen was almost in the same condition as when it arrives during the warm season at the laboratory's butter exhibitions, when discharged at Leith it was of the same consistency as butter that stands a few days in the laboratory's refrigerated chamber.

But exactly the opposite was it in the case of the butter stowed in the unrefrigerated hold. The figures from Leith, in the latter half of Table II, show that the temperature at the center of the casks had risen in every case, although its temperature was already high when leaving Copenhagen. And if the temperature at the surface was lower in Leith than at Copenhagen, that was due partly to the fact that the weather was cooler during the latter part of the voyage, and partly to the temperature of the sea being lower the nearer the Scottish coast was approached (see Table I). All the five casks stowed in the unrefrigerated hold were of a very soft consistency on arrival in Leith, which is not to be wondered at, when it is remembered that the temperature at the center was 60.8° to 62.4° F. And there is scarcely any doubt that if the warm weather experienced at the beginning of the voyage had continued the whole time, these five casks would have arrived in Leith in a half-melted state.

There is no doubt that the refrigeration was of benefit to the butter, and this opinion was also expressed by several of the Leith importers whom Assistant Holm called upon, simply for the purpose of hearing their views on this point.

It had also been intended to take the temperature in the unrefrigerated hold, but this was not managed, owing to various mishaps to the thermometers that had been taken. As far as can, in the meantime, be concluded from the temperature of the butter in that hold, it may be accepted that the temperature in the hold had been exceedingly high at the beginning of the voyage, because the temperature in every case rose at the center of the butter. In order that this should have been, the temperature of the hold must certainly have been at least 68° F. at the beginning of the voyage. During the latter part of the voyage, the temperature of the hold was lower; it would probably be about 57° F. This agrees, besides, with the figures for the temperature of the atmosphere and of the sea in Table I. It may be well to note that the warm hold in which the butter was stowed was stated by the officers as not to be regarded as the usual hold for butter, even when the ship was without refrigerators.

On the return voyage, when the refrigerator was not working, the temperature was taken in the holds that had been refrigerated. The temperature in the three holds in Table I was found to be, respectively, 64.9°, 62.2°, and 61.7° F.

The refrigeration in the *Rona* is effected by a refrigerator in which carbonic acid is compressed, and then caused to evaporate, so that it absorbs much heat from its immediate environment. The cold thus induced is applied to a solution of common salt, whose freezing point is lower than the temperature that can be obtained by the refrigerator. This cold salt water is pumped into a system of pipes, carried under the ceiling of the hold that is to be refrigerated, after which the salt water is returned to the refrigerator. This circulation of cold salt water in pipes makes them have such a low temperature that the moisture in the air settles upon them in the form of hoarfrost, and gradually they are covered with a thick layer of ice. When the refrigerator is stopped, the ice gradually thaws and the water begins to drop; but the machine is kept working until the discharge is completed in Leith, in order that none of it may drop on the casks. For the purpose of isolating the refrigerated hold, the ship's sides are covered with 8 inches thick of loose cow hair.

It is evident from the foregoing that the refrigerating conditions on board the *Rona* are exceptionally good, and, judging from the arrangements in this one ship and from the experiments just made, there really seems now a prospect of the reform which the agricultural interest has for many years desired in the transport service to England, shaping itself so as to please all parties, and the outlook is all the more hopeful, seeing that not only the English companies are providing their steamers with refrigerators, but the United Steamship Company here have announced their intention of doing so, too.

The laboratory, meanwhile, hopes to be able, in the course of the summer, to have the opportunity of making further observations in the vessels provided with refrigerators, especially when the temperature of the sea, which, of course, exercises such an important influence over that of ships' holds, becomes greater than it is at the beginning of the summer.

COPENHAGEN, *June, 1896.*

REFRIGERATED MEAT DEPOT AT HAVRE.

The Compagnie Générale d'Alimentation, of France, having for its object the importation of fresh meats from foreign countries, notably Australia, and conserving them by a freezing process, has recently erected and put into operation a large establishment on the Tancarville Canal, near Havre, which consists of two buildings, one for the refrigerating chambers and machinery, the other for administrative purposes.

The first of the buildings contains six refrigerating chambers, built with double walls of wood, the interval being filled with a nonconducting substance which thoroughly protects the chambers from the influence of the external atmosphere. In these vast chambers, a low degree of temperature is obtained in the following manner: First, by metallic pipes contained in furrows on the inner walls of the chambers, in which circulates at all times a liquid reduced by a special apparatus to 10° below zero. This liquid holds in solution a certain quantity of chloride of lime which prevents the liquid from congealing in the pipes, thereby arresting its continuous circulation. Second, when a lower degree of temperature is desired, such as will produce perfect congelation, it is effected by a process well known in physics, viz, by using a very volatile liquid, such as chloride of methyl, previously compressed in the reservoirs. By this means, a temperature may be obtained of 12° or 15° F. below zero, but the average temperature maintained in the chambers is about 11° below zero. It has been found that at this temperature, meat will be preserved in excellent condition for two or three years.

The establishment being located directly on the canal extending from Havre to Rouen, cargoes of meat are landed directly at the point and rapidly disembarked into the chambers. When the frozen meat is to be transported to Paris or other distant points by water, specially constructed barges are used. These barges are constructed with refrigerating chambers, and present, in a small way, a counterpart of the chambers and machinery already described as existing in the principal building. The company owns two of these barges, one called the *Elysée*, which will contain the carcasses of 9,000 or 10,000 sheep; the other, the *St. Remi*, is somewhat smaller.

This establishment, the completion of which was celebrated by a banquet on the 20th of May, 1896, is now in full operation, and the promoters of the enterprise are very sanguine of successful results. The English steamer *Moore King*, filled with cold chambers, arrived at this port on May 29, bringing directly from Australia a large cargo of beef, mutton, game, and salmon, which was at once transferred to the refrigerating chambers of the new establishment, and will be sent to Paris or consumed in this city, as occasion may require. All the beef, game, and salmon, it is said, will go to Paris, but a considerable quantity of the mutton is now being consumed in this city.

The customs duty on dressed beef entering France is 15 francs ($2.89½) per 100 kilograms (220.46 pounds); the octroi duty, 10 francs ($1.93) per 100 kilograms. On mutton, the customs and octroi duties are, respectively, 16 francs ($3.09) and 10 francs ($1.93) per 100 kilograms. Butchers pay wholesale in this market for the frozen mutton, less the octroi duties, 130 francs ($25.27) per 100 kilograms, and retail it, after paying the octroi duties, from 25 to 30 cents per pound. As above stated, all the beef and game are sent to Paris in the special barges, via the Tancarville Canal.

PHILIP S. CHANCELLOR,

HAVRE, *June 17, 1896.* *Deputy Consul.*

REFRIGERATED MEAT TRADE OF AUSTRALASIA.

It is not the total products of a country, but the surplus, that affects general prices, as only the surplus enters into general competition. While it may not harmonize with our notions of man's habits in an ideal state, the fact remains that meat is becoming more necessary as an article of food for a constantly increasing portion of the human family. With land growing relatively more scarce, with industry largely specialized, with the ever-increasing desire of man to get the best possible living with the least possible effort, there must be a tendency to economize effort and expense in the production of the staple articles used in civilized life.

The production of sheep serves a double purpose—often a double profit. Ordinarily, sheep may be profitably raised either for the wool or the flesh, and with the relatively increasing cost of raising cattle and the increased risk in raising swine, it seems inevitable that mutton must more and more take the place of other meat as an article of food.

Australia is peculiarly a sheep country, as, by reason of soil, climate, and vegetation, finer wools are produced here than elsewhere, and as the flesh of the Australian sheep is at least of fair quality when properly handled, the mutton trade of this country is a matter of growing interest to the world. Of the 611,000,000 sheep on the globe, Australasia has over 121,000,000 and of the 121,000,000 sheep of Australasia, New South Wales has 56,000,000, or nearly one-half. As New South Wales, with 1,200,000 population,

has nearly one-fourth more sheep than the whole United States, with 70,000,000, the surplus of mutton in Australasia must be of deep interest to our people, who are large exporters of pastoral products.

Sheep are raised in Australasia on a large scale and consequently very cheaply. Of the 56,000,000 in New South Wales, over one-half are owned by less than 400 persons, or in flocks of over 70,000 on the average.

The growth of the sheep industry in Australasia may be appreciated by a reference to the statistical facts. Mr Coghlan says that in 1861 there were, in all Australasia, 23,741,706 sheep; in 1871, 49,773,584; in 1881, 78,063,426; and in 1892, 121,939,965, about one fifth of the world's supply, of which New South Wales had 58,080,114, nearly one-half of Australia's total and one-tenth of the world's supply.

The center of meat consumption and, consequently, the point at which prices are practically established for the meats of the world is England. Of the 895,000 English tons of beef and 440,000 tons of mutton consumed in the United Kingdom in 1893, Australasia furnished 11,000 tons of beef and 60,000 tons of mutton, while of the 904,000 tons of beef and 464,000 tons of mutton consumed in 1895, Australasia furnished 25,000 tons of beef and 86,000 tons of mutton—a very considerable increase.

The following table shows the number of sheep consumed as fresh mutton in England for the years noted, the first column showing the number produced locally, the second column the number imported alive, the third column the number imported frozen, and the fourth column the total number consumed: *

Year.	1.	2.	3.	4.
1883	11,340,000	1,116,000	201,000	12,657,000
1884	11,750,000	945,000	632,000	13,527,000
1885	12,027,000	751,000	777,000	13,585,000
1886	11,582,000	1,039,000	1,187,000	13,808,000
1887	11,760,000	971,000	1,542,000	14,273,000
1888	11,575,000	956,000	1,975,000	14,506,000
1889	11,794,000	678,000	2,164,000	14,636,000
1890	12,667,000	358,000	2,948,000	15,973,000
1891	13,414,000	334,000	3,358,000	17,116,000
1892	13,457,000	79,000	3,310,000	16,846,000
1893	12,681,000	63,000	3,890,000	16,634,000
1894	11,987,000	407,000	4,283,000	16,677,000

In 1895, there were over 5,000,000 frozen sheep imported into the United Kingdom.

It will be noticed that there has been no increase in the local supply, though there has been a large increase in the total consumption, necessitating a constantly increasing importation. So far, England's deficiency of meats has been supplied chiefly by importations from the United States and Canada, largely in live cattle.

*See Wealth and Progress of New South Wales for 1894, p. 374.

I believe in 1890 there were 384,000 head of live cattle shipped from the United States to England; in 1891, 314,900; in 1892, 391,906; in 1893, 348,800; in 1894, 381,900; and in 1895, less than 300,000. In 1890, Canada sent to England 121,300; in 1891, 108,200; in 1892, 98,200; in 1893, 82,900; and in 1894, 82,000. In live cattle, at least, the meat supply for England from these countries is gradually declining. This is rather confirmatory of Mr. Fetherstonhaugh's opinion that meat production in the United States is not keeping up with the increasing population and consumption of the country.

As it is surplus and not product that affects prices in competitive markets, a review of Australia's supply, consumption, and surplus is of importance to the trade.

While the people of this country consume more meat than any other people of like population, it must be remembered that Australasia has 30 head of sheep and 3 head of cattle for every man, woman, and child in the country, while we have but two-thirds of a sheep and two-thirds of a head of cattle per capita.

According to Mr. Coghlan,* New South Wales had the following number of sheep:

Year.	Number.	Year.	Number.
1880	35,393,121	1888	46,503,469
1881	36,591,946	1889	50,106,768
1882	36,114,814	1890	55,986,431
1883	37,915,510	1891	61,831,416
1884	31,660,321	1892	58,080,114
1885	37,820,906	1893	56,980,688
1886	39,169,304	1894	56,977,270
1887	46,965,152	1895	(*)

*The decrease of sheep in 1895 from drought was some 9,500,000, the number in New South Wales on December 31, according to the returns of the chief inspector of stock, being a little over 47,000,000.

It will be seen that the highest point was in 1891, since which time there has been an average decline of fully 1,000,000, or a little over 2 per cent per year. However, it is believed that the success of artesian wells will check the decline and a considerable increase may soon be witnessed.

Mr. Fetherstonhaugh, a good authority, says of the supply of New South Wales:

It is shown that the flocks of the colony have decreased from 61,300,000 on the 1st of January, 1892, to 56,200,000 on the 1st of January, 1894, a shrinkage of 5,100,000 in two years. It is not thought that the number will fall below 55,000,000. The annual surplus available for slaughter and export is estimated at 8,500,000. Of this, local consumption and the other colonies would take about 3,500,000, leaving 5,000,000 for export annually in the shape of frozen meat, tinned meat, and tallow. The average loss from droughts will even probably reduce this to an average of 4,000,000.

*See Wealth and Progress of New South Wales for 1894, p. 330.

In a later pamphlet, dated December 31, 1895, this writer puts the same question before his readers thus:

> The number of lambs annually weaned from 56,000,000 sheep should be, as near as possible, 12,000,000. The annual decrease from mortality, etc., on 56,000,000 is estimated at about 3,000,000. We have therefore an annual surplus of some 9,000,000 sheep to dispose of, if the flocks of the colony are to be kept at an even number. Of this 9,000,000, some 4,000,000 are consumed locally, including those sent to Tasmania and Victoria, leaving, say, 5,000,000 for export as frozen and canned meats, extract, and tallow. To this we must add imports from Queensland, which will vary from 500,000 to 1,000,000, according to the seasons. If the seasons were regular and there were no droughts, there would therefore be about 5,500,000 sheep for export; but during the last twenty-one years the losses from adverse seasons amount to over 33,000,000 head, or an average of over 1,500,000 sheep a year. We can not, therefore, count on more than 4,000,000 sheep as being available for export. Some years there may be as many as 6,000,000, some years only 1,000,000.

The closing sentence tells a great deal of Australia, for the uncertainties of the seasons or the periodical droughts create so many dangerous contingencies as to almost paralyze the best efforts of her people a portion of the time and leave a fear at all times.

Now, if New South Wales has an annual surplus of 4,000,000 sheep, Australasia must have a surplus of fully 8,000,000.

The decline in the price of wool, the chief Australian staple, and the consequent financial stringency throughout the seven colonies, has aroused the latent energies of the people, and the most commendable enterprise is being shown and the most modern methods are being adopted in furtherance of the development of the "new industry"—meat exportation. The wisest Australians now declare the "meat-export business must save the pastoral industry of Australasia."

I see by W. Weddal's chart (St. Helen's Place, London) for 1893, 1894, and 1895 that, in round numbers, the United Kingdom consumed, of beef and mutton, 1,437,000 tons in 1893, 1,353,500 tons in 1894, and 1,435,800 tons in 1895. Of this, Australasia furnished in 1893, 69,800 tons; in 1894, 90,000 tons; and in 1895, 110,000 tons. This is in English tons of 2,240 pounds.

With the decline in price and increase in population, consumption, it would seem, should grow enormously with a revival of better times. From some writer unknown to me, I see that New Zealand made her experimental shipment of frozen mutton as far back as 1881, and the business has expanded until last year it is stated that no less than 2,409,000 carcasses of frozen mutton were exported from that colony to the United Kingdom. In 1891, this colony (New South Wales) began operations in earnest, and in 1893, there were 365,000 frozen carcasses sent to England; in 1894, 534,000; and last year, over 1,000,000. However, according to Mr. Greville's Year Book of Australia, New Zealand has maintained her ascendancy as, in 1893, she exported to the United Kingdom, 1,859,596, and in 1894, 2,031,000, while from Weddel's chart, giving imports in "tons," I would infer that New Zealand's export to the United Kingdom for 1895 must have been

2,400,000 sheep. I can not determine from the statistics just what proportion of the mutton exported from Australasia to the United Kingdom was frozen, what chilled, or what was tinned (canned). I incline to think the "tinning" industry will take a leading part in the new movement.

Mr. Fetherstonhaugh says:

> In 1893, exporters declared that it was impossible to put Australian meat in the "home market" at under 6d. (12 cents) per pound, yet it can now be sold at a profit at less than half that price.

There are now renewed efforts being made to increase the export trade, if not in all the colonies of Australasia, at least in Queensland and New South Wales. Not only are merchants and capitalists turning their attention more and more in that direction, but the pastoralists themselves are showing a deeper interest and giving more aid in organizing the industries. The discussion and experiments regarding breeds suitable for mutton are not among the least indications of earnest work for the future.

For the killing of sheep and preparation of mutton, there are now in active operation sixty-eight so-called "meat works" in Australasia, twenty-three of which are located in New Zealand, twenty-two in New South Wales, eighteen in Queensland, and five in Victoria. These works are classed as boiling, chilling, freezing, and preserving works, though some of them combine two or more of the processes.

It is claimed that the export of mutton from New Zealand has "pulled that colony through" the greatest depression ever known, and the other colonies seem determined to benefit by her example and her experience.*

In former years, there has been a great deal of waste in this country, but people are now learning the necessity, not only of utilizing many products formerly regarded as of no value, but they are cheapening production by the introduction of the most improved methods and by the most rigid economy in labor.

I am indebted to Mr. Fetherstonhaugh, of the Graziers' Meat Export Company, for the following very valuable and comprehensive information, which he kindly prepared at my request:

Cost of putting 100 pounds of mutton on the London market.

Charges.	New Zealand (Belfast, in Christ Church).		New South Wales (Graziers' Meat Export Company).		Queensland (Queensland Meat Export Company).	
Killing, freezing, handling, bagging, marking, and weighing to ships	*Pence.* 15	$0.30	*Pence.* 37	$0.74	*Pence.* 40	$0.80
Freight to London	75	1.50	75	1.50	75	1.50
Insurance, all risks	8	.16	7.5	.15	7.5	.15
London charges	25	.50	25	.50	25	.50
Total	123	2.46	144.5	2.89	147.5	2.95

*I write almost exclusively of mutton, as the frozen-beef trade of Australasia is as yet of very small importance.

Cost of mutton at this date, May, 1896—New Zealand crossbreed, 1½d. (3 cents); Queensland prime, 1⅛d. (2¼ cents). In New Zealand, the perquisites to the factory are 6d. (12 cents); in New South Wales, 2d. (4 cents); in Queensland, 2d. (4 cents).

A freezing company can do the work for itself for less by 6d. (12 cents) per 100 pounds than above rates.

Freight to London just now also can be done at 0½d. (1 cent) per pound, or 4s. 2d. ($1) per 100 pounds, being abnormally low, but I think it will be at 0⅝d. (1¼ cents) per pound in future, and never over 0¾d. (1½ cents).

The cost of prime mutton for export in Sydney, New South Wales, is about 1⅛d. (2¼ cents) to 1¼d. (2½ cents) at present, but this is higher than usual, as many ships are here wanting freight; usually it is 0⅛d. (0¼ cent) per pound, or 25 cents per 100 pounds lower.

At 350 miles inland, prime mutton is worth 0¼d. (0½ cent) less than in Sydney, all meat taken as dressed.

To lay down mutton in the London market, all charges, including cost of meat, present price:

Description.	New South Wales.		New Zealand.		Queensland.	
	Pence.	*Cents.*	*Pence.*	*Cents.*	*Pence.*	*Cents.*
Meat at point of shipment	1.125	.0225	1.5 to 1.75	.03 to .035	1.125	.0225
Charges	1.445	.0289	1.23 to 1.4	.0246 to .028	1.47	.0294
Total	2.570	0.514	2.73 to 3.15	.0546 to .063	2.595	.0519

It will be noticed in Mr. Featherstonhaugh's calculation that the charges are lower in New Zealand than in the other colonies. This is chiefly owing to the shorter distance between pasture and factory, and, consequently, lower cost of haulage to the works. In New Zealand, the average inland, or railway, haulage is not over 30 miles, and freights in Australia, as compared with the United States, are very high.

The most enterprising gentlemen are now urging forward these new movements, and are endeavoring to have works erected near the pastoral centers, that railway freights may be cheapened by eliminating the haulage of nearly all waste.

Then, too, there is quite a general feeling that the question of breeds should be studied and experimented upon. Wool will probably always be the chief product of Australasia, but many experienced persons believe that, by proper breeding, some cross may be secured that will considerably increase the value of the mutton without materially affecting the value of the fleece.

GEO. W. BELL,

SYDNEY, N. S. W., *May 27, 1896.* *Consul.**

* At Consul Bell's request, I have gone carefully through the above report, and I am glad to have had the opportunity, as I indorse all he has stated.—C. FETHERSTONHAUGH, *Managing Director Graziers' Meat Export Company of New South Wales.*

REFRIGERATED MEAT INDUSTRY OF VICTORIA.

Prominent among the industries of this colony (Victoria) is the exportation of frozen meat, and a few words descriptive of the industry itself and the cold storage provided may not be uninteresting.

The two concerns doing the largest business in the colony are Messrs. J. Hotson & Co. (who control the Newport Freezing Works) and the Riverina Frozen Meat Company, whose works are situated at Deniliquin, in the southern portion of New South Wales. It may be noted that the former concern exports one-half of the meat that goes to England from the colony.

The Newport Freezing Works were erected at a cost of £40,000 ($194,660) by the Government of Victoria, and are rented to Messrs. J. Hotson & Co. at a yearly rental of £650 ($3,163.22). This is merely a nominal rental, and may be said to be a subsidy. The terms and conditions upon which stock will be received at this establishment are as follows:

The party desiring to send mutton makes application for freezing and shipping space, and agrees to accept the allotment of such space from time to time, and to forward sheep to the Newport refrigerating works, in accordance with conditions annexed, to be frozen, shipped, and sold in England for their account, as under. Then follows a list of the sheep and lambs to be shipped in the different months of the year, delivery to be made at the works in such months as may from time to time be arranged.

Sheep are to be of prime quality; the manager of the freezing works is at liberty to reject any not so. All sheep or lambs sent to the works are to be graded. Then follows a list of the grading; sheep grade A, 56 to 65 pounds, freezing weight; grade B, 50 to 54 pounds; grade C, 66 to 80 pounds; grade D, 40 to 49 pounds; lambs, 30 to 49 pounds. Rejected or bruised sheep are to be sold on behalf of the owner and proceeds passed to his credit; also, the skins and inside fat, all blood, offal, tongues, heads, feet, and kidneys are to be retained by the freezing works as their absolute property. To cover the cost of slaughtering, freezing, weighing, labeling, delivering alongside the vessel, freight, primage, insurance, "all risks," bags, and all London and other charges, the owner pays to the freezing works a consolidated rate of 3¼ cents per pound on sheep and 3½ cents per pound on lambs (the freight rate paid to the steamship companies is 1½ cents per pound to London and 1¾ cents per pound to Manchester and the insurance $12 per ton). The Newport works are in treaty with a line of steamships to run direct to Manchester and hope to get the rate reduced from 1¾ cents per pound to 1½ cents per pound, thus being the same as to London.

The freezing works, on their part, take reasonable caution; but are not liable in connection with the freezing, storing, loading, etc.

The contract further provides that the selection of ships is to be at the option of the freezing works, and that in the event of goods being shut out of shipment for any cause, the freezing works can dispose of the carcasses

in the local market, and shall be at no loss or any reclamation, owing to carcasses not realizing net; the amount drawn against is to be repaid to the freezing works on production of home account sales, or any surplus over advances is to be paid by the freezing works.

In a circular issued by Messrs. John Hotson & Co. in January, they state that during the present year this trade has attracted more attention, and there appears to be a certainty that in the immediate future it will become a highly important factor in the export trade of the colony. Several new freezing works have been erected during the year, whose output must pass through this port (Melbourne). Then follows a list of the carcasses of sheep and lambs shipped by different vessels during the months of the past year, totalizing 204,333 carcasses, being an increase of 40,434 over those shipped during the year 1894.

Prices, which, at the beginning of the year, were fairly remunerative to shippers, gradually fell till they reached the lowest point on record—4 cents per pound—in May, from which time they rapidly recovered, until in June, the highest point of the year was reached—7½ cents per pound.* Since October, a reaction has set in, causing a gradual fall in prices to about 5 cents per pound at last advices. This fall has been caused by the operations of holders of River Plate mutton, who, having large stocks on hand and becoming alarmed at the prospect of losing their hold on the Liverpool and Manchester trade, suddenly dropped their prices below the Australian, and are continuing this policy up to the present time. This must shortly end, and with the decreased shipments from Australia, which are bound to take place after the New Year, better prices will rule. Low prices, however, have, of late, made the trade, with the result that the consumption has expanded into new channels, and improved prices naturally followed the increased consumption. Messrs. Hotson & Co. claim new and important departures have been made in their business, namely, the purchase here, on London account, of shipments. Orders of this description have come forward freely, and the Newport works have engagements up to the close of January next already booked. The advantage of this system to the farmer and grazier is clear, for they get their money at once without having to wait and take the risk of shipping on their own account. The Newport works act as agents; they either buy on orders or act for clients here as shippers, but they rarely ship any goods on "spec."

During the coming year, the facilities for freezing and slaughtering will be materially improved. The Newport works are to be remodeled and enlarged to enable this new departure in the export trade to be dealt with on the best terms. A new machine, the "Haslam Ammonia," will be erected within the next few months, and extensive additions made in connection with new chambering, so as to provide for greatly increased powers and storage accommodation, also for canning and preserving. Arrangements are so planned that the frozen meat will be transferred to the new cold railway trucks, without exposure to any change of temperature or undue

handling; thus, the whole work of receiving stock, slaughtering, freezing, bagging, and placing on board ship will be done with the least possible amount of handling, and the mutton placed on the English markets in both the most economical and attractive condition.

These works have also made a new departure in opening up a direct trade with Manchester. Cargoes shipped by sailing vessels have been landed in that port in excellent condition, and further shipments will be made in May next, when a regular line of monthly steamers will be placed on this service, which, with lower rates of freight and the saving in railway charges as compared with London, should stimulate the industry, especially in such a center as Manchester.

For the information of shippers and graziers, the following are the grades and weights of sheep that find most favor with the London buyers: Merino wethers, 45 to 65 pounds; merino maiden ewes, 40 to 50 pounds; crossbred wethers, 56 to 70 pounds; crossbred ewes, maiden, 50 to 60 pounds; crossbred lambs, 32 to 40 pounds.

This firm say that though London prices are at present low, this will stimulate consumption, and as quantities shipped from other colonies must be considerably less for the next few months, there is every prospect that shippers with stock available in March and April will realize good returns. The freezing works are prepared to forward such for sale to London or Manchester at lowest rates and give clients the option of selling in England through any agent they may desire. The firm confidently look forward to an increased and enlarged business during the present year.

The Government of Victoria, to a certain extent, may be said to subsidize this industry. They have built works which they rent to the different companies at a very low rental, and, here in the city, have built on a large scale a cold-storage chamber (which will be described hereafter), in which is to be found every modern facility for the work, where anyone can send poultry, rabbits, butter, or mutton, and where they are charged a merely nominal rate.

It will be of interest to briefly trace the methods of treatment. The sheep run from the drafting yards up a race to the slaughterhouse on the third story of the killing block, in which thirty butchers can be employed simultaneously. On arrival here, they are drafted into pens, whence the butchers take them as required, and, after killing, leave them to bleed on a grating above a gutter, which carries the blood to steaming tanks below; a dressing hook is at hand to receive the carcass after it has bled.

When the carcass is to be frozen, it is hung to a runner, placed on overhead rails, and conveyed by its own weight down an inclined plane to the cooling room at the top of the freezing block; thence, after being frozen hard and shrouded in calico, into the frozen stores below, where it is stacked to await transport. No visitor can fail to be struck by the economy of labor and the absence of handling effected by these arrangements, which make gravitation do all the locomotive work of the factory.

Special attention may be called to the machine which delivers the carcasses from the cooling room to the freezing chambers through hatchways in the floor, thereby economizing the cold air. The usual arrangement of opening doors in the side permits the cold air to escape. The freezing block—a fine piece of scientific work—is insulated throughout with Firth's prepared pumice, which New Zealand experience shows to be superior to charcoal, having the additional advantages of being incombustible and germ proof. The cool stores on top of the block have accommodation for 4,000 carcasses in one vast hall. The six freezing chambers into which the first floor compartment is divided are each capable of freezing 800 sheep. Two of these are required to accommodate each day's killing. The lower floor is divided into three stores, with a total capacity of 30,000 carcasses of mutton at one time. On the ceilings and walls of the freezing chambers and stores are attached no less than 7 miles of piping, in which compressed ammonia is expanded and circulated for the production of the necessary cold.

After the carcasses have been stacked in the stores, they are conveyed by mechanical link-belt travelers direct into the door of the refrigerator railway trucks alongside.

The boiler and machinery section consists entirely of brick and iron and forms a fireproof block between the slaughtering and freezing departments. The machinery was supplied by the Hercules Ice Machine Company, of Chicago, Ill., and consists of two distinct refrigerators, while the main boilers are of the Babcock & Wilcox type, the fuel used being wood. The entire plant requires to be seen to be appreciated; but its effectiveness may be best illustrated by the statement that on a consumption equal to 3½ tons of coal per day it will freeze 1,500 sheep and store 30,000 carcasses.

It may be appropriate to close this article by a description of the cold-storage chamber here in Melbourne, which was built by the municipal council, and, as I said before, was built by the city to aid the industry. It stands in the lower part of the city and occupies a square; a railway track runs through it, and on either side of the track are the cooling rooms and the freezing chambers. The cooling rooms are merely for chilling butter and such articles as do not require to be frozen. The cold air is generated by the compression system—that is, by means of the compression and expansion of ammonia; in a chamber next the engine room are tanks of cool brine, and the air is forced over these and thence goes into the freezing chambers. This is a different method to that generally used, as in most cases the pipes are in and around the freezing chamber. This way, however, is considered better, as the cold air is drier and hence a better preservative of the meat. The temperature of the freezing chambers ranges from 18° to zero F., and it does not take long to freeze the mutton as solid as a rock. The mutton is unloaded from the trucks and goes directly into the freezing chambers, and as soon as it is frozen, it is incased in a sack and branded, and is ready for shipment and to be transferred to the cold-storage room of the steamer. Meat is frozen so solid that it can safely be kept, even in this country, in

the natural temperature for five days without injury. Upon the occasion of my visit to the freezing rooms, they were packing rabbits and poultry. The rabbits are sorted as to size, small or poor animals being rejected; then they are packed in cases made of slats, 4 dozen rabbits being put in a case. They are perfectly packed, not an inch of room being wasted, and then the case is placed in the freezing chamber and the rabbits very shortly become as hard as stone.

Taken altogether, this industry is an interesting one, and is destined to a great future in Victoria. From the fact of the industry being so far advanced in America, it is not probable that any trade will be established with that country, but the trade with England will undoubtedly grow, and the shipping of frozen meat will one day be one of the foremost industries of this colony.

DANIEL W. MARATTA,

MELBOURNE, *February 29, 1896.* *Consul-General.*

SANITARY IMPROVEMENTS AND TRADE OF PLYMOUTH.

I beg to submit a report for Plymouth and district. I also inclose the report of Mr. George Hingston, consular agent at Dartmouth; Messrs. E. B. Renouf and William Carey, consular agents at Jersey and Guernsey, respectively, have nothing to report.

As sanitation has so great a bearing on the social condition of the people and is at the present day so largely discussed, with a view to improving the public health, I subjoin some remarks bearing thereon in this locality, in the hope that they may be useful. The density of population has kept the authorities watchful to prevent and cope with disease. To the great care exercised can alone be attributed the healthful condition and low death rate of this, the second most densely populated town in the country (Liverpool being the first). The mean population is 59.7 persons per acre and the proportion of the inhabitants occupying tenements is considerably in excess of any of the large towns. The number of houses is 10,840, of the ratable value of £328,679 ($1,599,516).

A scheme for the housing of the working classes is being carried out. Each occupier will practically have independent domestic offices and conveniences.

A steam disinfector and disinfecting station has been at work over twelve months without a hitch; 3,568 articles of bedding, clothing, carpets, etc., have been disinfected. The effect of disinfection, combined with the isolation of infected cases in hospital, has been most marked in the reduction of the number of cases of scarlatina reported.

The first of a series of new ward pavilions of the Isolation Hospital, with bath house and porter's lodge, was opened in October last. The medical officer is pressing the authorities for a complete system of refuse destruction and disposal. Lodging houses are now systematically inspected, 4,700

visits having been made in this way in twelve months, resulting in the carrying out of 1,800 sanitary improvements. The inspection of meat, fish, fruit, and other articles of food has been continuously carried on; 4,185 visits of inspection have been made to cow sheds, dairies, milk shops, and bakehouses, the general sanitary condition of which has materially improved.

Great progress is being made in the building of a new storage reservoir, which will have a capacity of 500,000,000 gallons, sufficient for the supply of 130,000 persons for 130 days at 6,000,000 gallons per day.

My account of the agricultural prospects in this locality will probably differ materially from the reports of other districts. Devon has hitherto been regarded as the wet county; this year Devon and Cornwall have turned out to be the driest. The shallow soil demands more moisture than most counties, but this year its absence bids fair to be disastrous. In many places wheat, barley, and oats are ripening prematurely, with very short straw. The hay saved was exceedingly light, scarcely worth the carrying. Most root crops are very thin; potatoes are small, but good. The strawberry crop was about half an average; apples and other fruits probably about the same. Trade and commerce have varied but little, the exports to the United States being $344,092, as against $296,729 to the 30th of June, 1895.

THOS. W. FOX,

PLYMOUTH, *July 6, 1896.* *Consul.*

REPORT FROM DARTMOUTH.

One firm here continues to do a large business in engineering, building, and fitting out steam launches and other vessels. The other shipbuilders have been doing a fair amount of business, principally fitting out and repairing yachts and other vessels. The Demerara and West India boats call here every two or three weeks for mails and to coal. The number of other steamers calling here for bunker coals has not been as large as formerly. The imports have been almost nil. The harvest is not expected to turn out well, on account of the long drought.

G. HINGSTON,

DARTMOUTH, *June 30, 1896.* *Consular Agent.*

BEET-SUGAR INDUSTRY IN FRANCE.

A large acreage of beets is sown annually in France; and this is not to be wondered at, seeing that, even in unfavorable seasons, the crop pays the farmer better than wheat or any other agricultural product. In 1894, more than 1,700,000 acres of land were planted in beets, giving a total production of 18,400,000 tons of the root, or an average of nearly 11 tons per acre, worth about $4 per ton for forage and the manufacture of beet sugar. From 50 to 60 per cent of the beet root raised in France is manufactured into

sugar, the yield being from 7 to 9 per cent of the gross weight of the root. As to the expenses of manufacturing the beet sugar, that, of course, varies, but it may be computed at from 10 to 12 francs ($2 to $2.50) per 100 kilograms (220 pounds).

EXPENSE OF PRODUCING BEET ROOT.

The experience of French growers shows that the expense of cultivating 1 acre of beets is as follows:

Preparing the land	$3.00
5 pounds of seed	.50
Hand weeding and thinning	1.25
First working and transplanting	1.25
Second working and transplanting	1.00
Gathering and piling beets and tops	3.00
Total	10.00

In the above, no estimate is made for the cost of fertilizers, because it is not always necessary to employ fertilizers. This depends upon the extent to which the land was manured for the previous crop. It is calculated, moreover, that the residue of leaves or stalks or litter left on the field after they have been fed to cattle will furnish much more manure than the cultivation of the beet requires. It will be seen from the following tables that the average annual yield is from 10 to 12 tons of beet root per acre of land.

Beet root cultivated in France.

Year.	Area.	Total production.	Average per acre.	Total value.	Average per ton.
For forage.	*Acres.*	*Tons.*	*Tons.*		
1890–91	792,000	8,000,000	10.1	$31,444,000	$3.93
1891–92	777,000	8,100,000	10.04	31,590,000	3.90
1892–93	716,000	8,500,000	12.43	38,200,000	4.25
1893–94	811,000	8,900,000	11.11	38,500,000	4.30
1894–95	1,032,000	10,800,000	10.58	38,888,000	3.60
For sugar.					
1890–91	566,000	7,140,000	12.61	37,842,000	5.30
1891–92	600,000	6,500,000	10.83	28,000,000	4.32
1892–93	750,000	6,530,000	9	33,200,000	4.41
1893–94	635,000	6,100,000	9.8	29,000,000	4.76
1894–95	670,000	7,600,000	11.34	30,400,000	4.39

There has been less activity in beet sugar during the years 1894–95 and 1895–96 than for several preceding years, owing to the bounty paid by Germany on sugar exported from that country. Considerable quantities of the strong, low grades are purchased for the United Kingdom; but the better or medium qualities are mostly kept for the home refineries, which are, for the most part, situated at or near Paris and in the north of France. The fine, white crystallized sugars are principally taken by England, Morocco, the Argentine Republic, Algeria, and Turkey. The consumption of French sugar in foreign

countries might keep better pace with the production if it were not for the bounty system adopted by other European countries, notably Germany, which pays from $1 to $1.50 per hundred on exported sugar, to encourage the industry, and at the same time increase foreign consumption. Apparently, the only effect of the plan has been to increase competition and reduce prices. A bill is now before the French Parliament providing for an export bounty on French sugar, in order to enable French manufacturers to compete more successfully in foreign markets, especially the English market, where the per capita consumption of sugar is more than three times greater than in France or Germany and six times greater than in Austria.

Exportation of beet sugar from France.

Country.	Quantity.				Value.		
	1892–93.	1893–94.	1894–95.	1895–96.	1892.	1893.	1894.
Raw sugar.	*Tons.*	*Tons.*	*Tons.*	*Tons.*			
England	81,603	118,290	119,139	71,462	.....	.....	.....
Other countries	13,677	34,865	17,618	15,390	.....	.....	.....
Total	95,280	153,155	136,757	86,852	$6,804,000	$11,823,000	$12,489,000
Refined sugar.							
England	33,608	46,490	48,490	43,245	.....	.....	.....
Switzerland	17,515	4,881	1,390	1,452	.....	.....	.....
Turkey	10,590	8,184	8,418	7,247	.....	.....	.....
Morocco	12,295	10,328	12,341	8,944	.....	.....	.....
Argentine Republic	14,605	7,114	11,615	9,783	.....	.....	.....
Algeria	13,656	12,160	12,444	11,078	.....	.....	.....
Tunis	1,730	1,137	1,642	1,589	.....	.....	.....
Uruguay	3,083	637	262	.....	.....	.....	.....
Belgium	307	405	153	.....	.....	.....	.....
Russia	5	1,064	16	.....	.....	.....	.....
Italy	205	53	49	.....	.....	.....	.....
Greece	19	14	13	.....	.....	.....	.....
Egypt	141	139	145	.....	.....	.....	.....
Chile	1,802	1,162	804	.....	.....	.....	.....
Other countries	6,828	6,215	8,505	8,680	.....	.....	.....
Total	116,389	99,983	106,287	92,018	9,631,430	9,271,836	9,830,361

ADVANTAGES OF BEET CULTURE.

There is absolutely no waste of the beet product. Every part of the vegetable is utilized and rendered valuable in one way or another, whether it be used for sugar or for forage, or the two combined. The pulp of the root, after the juice has been expressed for sugar, is eagerly devoured by cattle, and is found to be extremely nourishing. Not only the roots, but the leaves and stalks are utilized as food for cattle, and it has been found that, especially when fresh, they not only increase the animal's fat, but also largely increase the secretion of milk in the cow. The dry leaves and stalks, when mixed with straw, afford excellent and wholesome food during the winter for cattle and sheep. Altogether, the beet root or the residue after the juice has been expressed supplies, with the leaves and stalks, nourishment

for cattle and sheep more abundant, perhaps, than any other forage that could have been cultivated on the land.

It is, moreover, stated that a large profit is derived from selling the leaves to tobacco manufacturers, who prepare and mix them with the tobacco which is made into cigars and cigarettes or smoking tobacco. In France, where the State has a monopoly of tobacco, and the sale of cigars, cigarettes, and all kinds of tobacco, including snuff, appertains exclusively to the Government, one can hardly assume that such a system of adulteration would be practiced, though it must be admitted that French cigars and cigarettes are often notably deficient in the stimulating properties of genuine tobacco. It has been asserted that certain beet growers realize enough from leaves sold for tobacco to pay all the expenses of cultivating the crop.

ILLUMINATING ALCOHOL FROM BEETS.

But the beet is commanding attention at this time in France as applicable to another purpose than that for which it has hitherto been principally used, viz, for nourishing cattle and sheep and for making sugar. Mr. Henry Bouchere, French Minister of Commerce, is taking the initiative in a very interesting matter, which may eventually prove to be of considerable benefit to French agriculture. He has conferred with several scientists for the purpose of organizing a competition, on which the sum of $20,000 will be expended, with a view to ascertaining whether alcohol extracted from potatoes and beet roots can not be effectively utilized for lighting by incandescence. It is argued that this would be a very valuable industry, the more so as the supply of petroleum in America appears to be on the decrease, and that at a moment when the German Government is encouraging the export of sugar by liberal bounties, it would be well to find another market for the surplus of beets which is annually produced. If the upshot of the consultations between the Minister of Commerce and the scientists prove to be satisfactory, a series of experiments will be inaugurated at once. The sum named will be divided among the investigators who may succeed in solving the problem.

USES OF THE BEET IN EUROPE.

It is, of course, impossible, within the limits of a report such as this, to give an elaborate treatise on the method of cultivating the beet, but there are a few salient points which can well be considered, as they may reveal something useful to those interested in the subject.

The beet is extensively cultivated in most European countries as food for cattle, and, in this respect, presents a great agricultural feature; but, at present, we will consider only the facts bearing upon the cultivation of the root for the manufacture of sugar, a principal object being to present the means that have been used in the process of cultivation to augment the proportion of sugar in the beet. Neither physiology nor chemistry has pointed out the means of obtaining this result, and we must, therefore, rely upon the practical experience of the farmer.

M. Achard, who experimented during many years, has stated that beyond the choice of the seed, the result obtained will depend (1) on the nature and exposure of the ground, (2) on the quality and quantity of the fertilizer used, (3) on the preparation of the ground, (4) on the mode of planting, and (5) on the care given to the plantation. The following interesting facts concerning these several propositions have been supplied by an intelligent French farmer largely engaged in beet culture.

MARYLAND LANDS ADAPTED TO BEET CULTURE.

Experience in France shows that all land suitable for the growth of wheat may be employed for the cultivation of the beet; nevertheless, it is very necessary to avoid a soil too compact or containing too much clay, which in dry seasons would tend to prevent the development of the beet. A soil composed of sand and clay, though it may not be altogether suitable for wheat, will serve well for the cultivation of the beet. A sandy soil, resting upon a substratum of clay, when well manured, is a very good soil for the beet, but less so than that of sand and clay combined. Sandy ground without cohesion, though it may be highly fertilized, is not suited to the beet, for the reason that water filters through it too rapidly; marshy and turfy lands are equally unsuitable. Land intended for the cultivation of the beet should have a light bed or soil that can be plowed from 9 to 12 inches deep, in order that the growing root may easily penetrate it.

The soil of the eastern shore of Maryland bears a striking resemblance to the land in the beet-growing sections of France, and the climate of that section of Maryland is admirably suited to the growth of the beet. Without entering into details, it may be stated that a great agricultural advantage could be derived from the cultivation of the beet by farmers in many sections of the United States, and the manufacture of the product into sugar would soon become a great object of commerce—an industry that would supply advantageously a material to supersede the sugar cane of the West Indies and the Hawaiian Islands. The beet root can also be profitably manufactured into vinegar and alcohol.

CULTIVATION OF THE BEET IN FRANCE.

A great deal depends in beet culture upon the position of the ground. A soil too damp is not suitable for the sugar beet, because in this case the root gains in quantity, but loses in quality; a soil moderately humid and exposed to the midday sun should be preferred. It is necessary above all to avoid land which is shaded by trees and over which the air can not circulate freely.

In France, the cow-yard manure is greatly preferred over that of the horse, and that of the hog and sheep is absolutely avoided. The quantity of manure can hardly be determined; it ought to vary according to the natural fertility of the soil. A field well manured will produce relatively more beets, but the quality of sugar will be in an inverse ratio to the excess of

manure. Good ground, well manured, which has been cultivated the first year in wheat and the second year in another kind of cereal, forms the third year an excellent preparation for the beet, without additional manure. Ground less fertile, but well manured and cultivated in wheat the first year, may be planted in beets the second year. But ground of mediocre quality, when intended for the cultivation of the beet, must necessarily be treated with proper fertilizers the same year. Vegetable manure is greatly to be preferred, if used in sufficient quantity, for the reason that an excess of it will not diminish the sugar, as animal and chemical manures are likely to do. Ashes, lime, and marl are much used in France. The bad effects of animal manures may be avoided if the land is cultivated in another crop before the beet is planted. Under any circumstances, the land should be manured from six to twelve months preceding the planting of the beet.

If it is found necessary to use manure, the field should be deeply plowed in the autumn and again in the spring when the weather will permit. If the field is to receive plants instead of the seed, it should remain untouched after the two plowings above mentioned until the time of planting, when it is to be plowed into straight, deep furrows and beds thrown up suitable for the beet plant. If the field requires fresh manure, it should be plowed in autumn. The seeds or capsules are to be planted in furrows and covered with a harrow.

The cultivation of the field, which has been prepared as above directed, is to be made in three ways—(1) by sowing the seed, (2) by planting the capsules which contain the seed, and (3) by plants raised in the hothouse. The seed of the beet being inclosed in a capsule of three, four, and five divisions, it is very difficult to open the capsule without damaging the seed; it is, therefore, best to plant the capsule itself. In this way, it is true, a superfluous number of plants will spring up, but they can be drawn and transplanted in another bed. When seed are used, the beds should be prepared and the seed planted the middle of April or not later than the end of that month. As above stated, they are to be sown in properly arranged furrows and covered with a harrow or with the hand to the depth of half an inch or an inch. Five pounds of seed are required for 1 acre of ground. When the weather is warm and favorable, the ground sufficiently wet, and the seed good and fresh, they will sprout in about eight days; otherwise, they may not germinate for fifteen or twenty days. The increase of the beet is very rapid after the first working. When the plant has about six leaves or more, one goes over the beds and draws out all the plants at a distance of less than 8 or 9 inches and resets them in spaces of more than 15 inches where there are no plants. The larger beets have less saccharine material than the smaller; the medium beets are the best.

GATHERING AND PRESERVING THE CROP.

The crop should be gathered toward the end of September, for at this time the beet has generally acquired its full growth, and it should not be subjected to the danger of frost, which, though it does not remove the sugar,

causes rapid decay. A dry time is most favorable for gathering the crop, and care should be taken not to expose the beet to too much dampness, which causes fermentation and the destruction, more or less, of the sugar principle. When the ground is sufficiently soft, the root may be drawn by stalks and leaves; but if the earth is hard, it will be necessary to use an iron instrument to aid in unearthing the root. After the beet is drawn, it is left on the surface until the laborers have quite completed the day's work, which will give the roots time to dry; then the stalks and leaves are to be cut off and the beets placed in a secure, dry place. It is important to remove the stalks and leaves before housing the beets, as they cause the root to sprout, which renders the extraction of the sugar more difficult. Moreover, the leaves are valuable as nourishment for cattle. The manufacture of the beet into sugar usually begins in the month of October, though it may be deferred for several months if the beet is kept in a dry, warm place, where there will be no danger of frost. The beet once frozen, can not be conserved and ought not to be used.

MANUFACTURE OF BEET SUGAR.

The work of extracting sugar from the beet requires several distinct processes, which may be named in the following order: (1) Cleaning the roots, (2) trituration or cutting into small bits, (3) pressure or diffusion, (4) evaporation. It is unnecessary to note the various methods of washing the beet. This is effected by hand or machinery, as may seem best to thoroughly cleanse the roots of all dirt and grit. Where the old method of extracting the juice is used, the root is first finely triturated and then subjected to pressure. Under the new method, the sugar is extracted by the process known as "diffusion," which is based on the physical phenomena of endosmose and exosmose. The roots, previously cut into small bits, are immersed in water, and the interchange between the water and the sweet juice of the beet begins at once through the intermediary porous partition represented by the cells of the beet substance, which separates the water from the juice contained in the cells. This method has a great advantage over that of pressure, which detaches part of the fibrous texture of the beet and renders the juice more or less impure. Moreover, the pulp from diffusion contains more organic matter than that obtained from pressure, and is much more valuable as food for cattle on account of its greater nutritive properties.

The diffusion process has now been applied to the extraction of sugar from the sugar cane; and the Compagnie de Fives-Lille, of Paris, has, during the last decade, established several plants of the kind in Spain, which are said to work with great success, the cane used being imported from Cuba.

C. W. CHANCELLOR,

HAVRE, *July 29, 1896.* *Consul.*

BEET-SUGAR LAWS OF AUSTRIA AND FRANCE.

The first reply to Germany, in reference to the increased sugar bounties, (see my report of May 30, 1896,*) comes from Austria. There the existing sugar law was amended as follows, viz:

(1) The consumption tax has been increased from 11 florins ($4.45) to 13 florins ($5.26) per 100 kilograms (220.46 pounds) of raw sugar net.

(2) The total amount of export bounty to be granted by the Government has been increased from 5,000,000 florins ($2,023,000) to 9,000,000 florins ($3,641,400).

This amendment went into effect on August 1, 1896, and will expire on July 31, 1897. It furnishes a temporary relief for the Austrian sugar grower and enables him to continue competition with his German neighbor. It will depend upon further developments in the bounty-paying countries whether the provisions of this amendment will be continued, extended, or curtailed.

Under the old law, the Austrian Government appropriated annually an amount of 5,000,000 florins ($2,023,000) for sugar export bounties, to be paid as follows, viz: On sugar from 88 per cent and below 93 per cent polarization, 1.50 florins (61 cents) per 100 kilograms net; on sugar from 93 per cent and below 99½ per cent polarization, 1.60 florins (65 cents); on sugar of not less than 99½ per cent polarization, 2.30 florins (93 cents).

If the Government, in paying these rates, had exceeded the appropriation of 5,000,000 florins ($2,023,000) at the end of the year, such excess was collected pro rata from the various sugar factories, according to the amounts received by them, the Government requiring sufficient security from every factory before paying the export bounty. While in the year 1888–89, the appropriation of 5,000,000 florins ($2,023,000) was exceeded by only 323,115 florins ($130,732), the export of sugar grew so rapidly that since 1892–93 the above appropriation was regularly exceeded by over 4,000,000 florins ($1,618,400), which amount had to be refunded by the various factories, so that, with the finer grades of raw sugar for export, the bounty, instead of 1.60 florins (65 cents), really amounted to 1.5376 florins (62 cents) in 1888–89, 1.2174 florins (49 cents) in 1889–90, 1.1093 florins (45 cents) in 1890–91, 1.1252 florins (46 cents) in 1891–92, 1.0778 florins (44 cents) in 1892–93, 1.0357 florins (42 cents) in 1893–94, and 1.2106 florins (49 cents) in 1894–95.

Under the amended law, the sugar growers will now be able to obtain from the Government the above rates either in full, or nearly so, as the amount to be refunded to the Government at the end of the year, if anything, will be small.

France has, for the present, only increased the duty on raw sugar 3.50 francs (68 cents) and on refined sugar 4.50 francs (87 cents) per 100 kilo-

* Printed in CONSULAR REPORTS No. 190 (July, 1896), p. 512.

grams net, to prevent German sugar from entering France to compete with her own product; but she will, no doubt, this fall, answer, either with an increase in her present covert export bounty or pay an open bounty to meet German sugar on the world's markets.

JULIUS MUTH,

MAGDEBURG, *August 13, 1896.* *Consul.*

NEW PROCESS OF RETTING FLAX AND HEMP.

At a meeting of the Flax Supply Association of this city, held yesterday, a very interesting descriptive paper on the improved system of retting flax and hemp was read and submitted to the association. The system was patented by Messrs. Loppens and De Swarte, two Frenchmen, who claimed that by this simple and comparatively cheap arrangement of apparatus, the virtues of the system of steeping flax in the River Lys, which had hitherto been supposed to belong to that river alone, could be extended indefinitely. Any water free from a mixture of lime or iron could be made as efficient as the waters of the Lys.

The new process is past the stage of experiment, as it has been at work two years, and flax retted by the process has been regularly sold in the market of Courtrai, Belgium.

The following is an abstract of the improved system:

It appears that the retting tanks are made up of two principal parts, the upper and the lower, separated from each other by an open floor. On the walls of the upper part, means are provided for keeping the flax straw suitably submerged by crossbeams, working in vertical slides, and capable of being fixed at any required height. In the lower part of the tank the inlet is provided just under the open floor, and the outlet at the floor proper. The flax straw is tied up in double sheaves, the root end of one-half being placed alongside the top end of the other, and so approximately cylindrical in shape; these sheaves are placed in a vertical position on the open floor, moderately tight and as regularly as possible; ordinary straw is then spread over the top to keep off dust or the effects of the weather, and boards are placed on this to equalize the pressure of the crossbeams, which are fixed so as to insure the straw being suitably submerged when the tank is full and working. The tank is then filled by opening the inlet and closing the outlet, and, as the level of the water rises, the straw rises also, till it is stopped by the crossbeams, where it remains motionless, pressing upwards all the time more or less. The inlet and outlet taps are then regulated so as to maintain the water at the right level and insure its being often enough changed. The changes which occur in the retting mass may be set down as follows: The water surrounding the stalks dissolves various vegetable substances, some of which are naturally soluble, while others become so under the action of fermentation. Thin streamlets of heavy juices are thus formed which flow down the stalks and slowly cross the layer of fresh water below the retting mass, and this without mixing with it, owing to the extreme slowness of the motion; on the bottom of the tank they then form a layer of dirty and denser water, which runs off by the outlet, while, at the same time, the fresh water just above it works its way up through the retting straw; also, in the form of thin streamlets, which take the place of the descending ones. This circulation, consisting in the natural fall of heavy juices and the corresponding rise of fresh water, takes place uniformly and to the exclusion of every other with equal facility in every part of the retting mass, owing to the vertical position of the stocks and the equal pressure all over the

tank. The principal advantages which may be expected to be derived from the system are the following: (1) The possibility of natural retting in running water—that is to say, the best; (2) the greatest uniformity obtainable in retting; (3) larger yield of fiber than any other system; (4) the results are certain and invariable; (5) it saves labor; (6) it limits the water consumption to what is strictly necessary to natural fermentation; (7) full benefit is derived from the water used in retting; (8) rivers are not contaminated; and (9) it is suitable for every part of the world where flax or hemp is cultivated.

The association considered this patent method of steeping flax so important that a resolution was adopted to make further investigation, and to this end, a committee was appointed to confer with the patentees and ascertain from them on what terms they would be prepared to grant a license for the use of their patent in this country, and report to a joint committee appointed by the Irish land commission for the improvement of the culture of flax.

JAMES B. TANEY,

BELFAST, *July 30, 1896.* *Consul.*

GERMAN LAW AGAINST DISHONEST BUSINESS METHODS.

I inclose a translation of a law recently enacted for the German Empire, which took effect on the 1st instant. The new law is intended to subdue certain forms of unfair competition, and is principally directed against swindling advertisements, false statements of quantities, slander, improper use of a firm name, and the betrayal of business secrets.

P. LIEBER,

DUSSELDORF, *July 30, 1896.* *Consul.*

[Translation.]

STATUTE FOR THE SUPPRESSION OF UNFAIR COMPETITION.

SECTION 1. Any person who, either in public advertisements or in communications intended for a larger number of persons, shall make any incorrect statements with respect to business affairs, especially the method of manufacture, the fixing of prices of merchandise or professional work, or the manner or source of purchase of merchandise, or the possession of rewards (distinctions), or the motive or purpose of a sale, intended to have the appearance of a particularly advantageous offer, may be compelled to discontinue such incorrect statements. Any trader producing or selling merchandise or work of the same or similar kind, or any union for the furtherance of professional interests, entitled to sue in civil process, may put forward his (or their) complaints.

Besides the complaint toward discontinuance of such incorrect statements, the said traders shall be entitled to damages, caused by such incorrect statements, against the person who made the statements, if the latter knew or should have known of their incorrectness.

The application of names, which, according to general commercial custom, are usually applied to designate certain articles without meaning to indicate the origin of the merchandise, shall not be included within the above requirements.

In the meaning of the requirements of paragraphs 1 and 2 of this section, figurative representations or other devices are to be considered as statements if they are calculated or qualified to replace such statements.

In the meaning of this law, agricultural products are to be considered as merchandise and agricultural work as professional work.

SEC. 2. For proceedings based on section 1, exclusive jurisdiction shall be exercised by the court in whose district the defendant has his business domicile, or, in default thereof, his dwelling. For a person who has neither a business domicile nor a dwelling in this country, the court of the place of his abode in this country, or, if such abode is not known, the court in whose district the act has been committed, shall be exclusively competent.

SEC. 3. For the security of the claim, allowed in paragraph 1 of section 1, orders of the court may be issued, even if the presuppositions set forth in paragraphs 814 and 819 of the rules of civil procedure should not appear. The lower court in whose district the action on which the claim is based has been committed shall be competent; for the rest, the requirements set forth in paragraph 820 of the rules of civil procedure shall be applied.

SEC. 4. Any person knowingly and with an intention to produce the appearance of a particularly advantageous offer, who shall make any statements in public advertisements, or in communications intended for a larger number of persons, concerning the quality, the method of production, or the fixing of the prices of the merchandise, or the possession of distinctions (rewards), or the manner or sources of the purchasing of such merchandise or of professional work, or the motives or purposes of the sale, which are untrue or calculated to mislead, shall be subject to a fine of not more than 1,500 marks ($357).

An offender who has already previously been fined for a contravention of the aforesaid requirement shall, in addition to or instead of such fine, be liable to confinement or imprisonment for a period of not more than six months. The requirements of paragraph 245 of the penal code shall be applied accordingly.

SEC. 5. The federal council (of the German states) shall be authorized to issue decrees, according to which, in the retailing business, certain articles of merchandise shall only be permitted to be sold or offered for sale in certain units of number, length, or weight, or provided with a statement on the article itself or its cover showing number, length, or weight.

For the retailing business of beer in bottles or jugs, it shall be lawful to require the statement of the quantities, but reasonable limits for deficiencies shall be established.

Any such rules prescribed by the federal council shall be published in the Imperial Law Gazette (Gesetzblatt) and laid before the Imperial Diet immediately or at the commencement of its next session.

Offenses against the requirements of the federal council shall be subject to fines of not more than 150 marks or confinement.

SEC. 6. Any person who shall, for purposes of competition, make or circulate any assertions of facts concerning another person's business, or the proprietor or manager of a business, or with relation to the goods or professional work, calculated to disturb the carrying on of the business or injure the credit of its owner, shall be responsible to the injured for damages if the truth of such assertions can not be proved. Besides, the injured shall be entitled to sue for the discontinuance of any further repetition or further circulation of such assertions.

The above rule shall not be applied if the person making or the person receiving such information shall have a just interest in the same.

SEC. 7. Any person who, against his better knowledge, shall make or disseminate any untrue assertions of facts about the proprietor or manager of a business or with respect to its merchandise or professional work, calculated to injure the carrying on of such business, shall be subject to a penalty of not more than 1,500 marks or to imprisonment of not more than one year.

SEC. 8. Any person making use in his business intercourse of a name of a firm or the special designation of a trade or an industrial undertaking in a way calculated to create confusion as to the firm's name or the special designation which another person has a right to make use of, shall be responsible to such person for any damages. Besides, action may be brought for discontinuance of such improper use.

SEC. 9. A penalty of not more than 3,000 marks ($714) or imprisonment of not more than a year shall be imposed upon any employee, workingman, or apprentice in a business establishment who shall communicate during the time of his engagement, without being authorized,

any business or trade secrets intrusted or accessible to him in connection with the performance of his duties to others for the sake of competition or with the intention to injure the proprietor of the establishment.

The same penalty or punishment shall be imposed upon any person who, without authorization, either uses for himself or communicates to others any business or trade secrets obtained by him either by any communication described in the foregoing paragraph or by any action not in accord with law or good morals.

Besides, offenders shall be responsible for damages. If there are several persons liable, they shall be responsible as joint debtors.

SEC. 10. Any person who shall try, for purposes of competition, to persuade anybody to make any unauthorized communication, as described in section 9, paragraph 1, shall be subject to a fine of not more than 2,000 marks ($476) or imprisonment of not more than nine months.

SEC. 11. The title for action for discontinuance or redemption of damages, designated in sections 1, 6, 8, and 9, shall become lost by limitation after a period of six months from the day on which the person entitled to claim has become cognizant of the action and the person of the offender, and without regard to such knowledge, after three years from the time of the offense.

The limit for damages shall not begin before the time when the damage arises.

SEC. 12. With the exception of the cases mentioned in section 5, penal proceedings will be commenced only on proposition. In the cases of section 4, any of the business men or unions mentioned in section 1, paragraph 1, have a right to put forward a proposition for punishment. Withdrawal of the proposition is admissible.

Offenses, the prosecution of which will be commenced only on proposition, may be pursued by the person entitled thereto in the way of private procedure without previously addressing the public prosecutor. Public action will only be taken by the public prosecutor if it is in the interest of the public. In cases of private procedure, the (lower) court of jurors shall be competent.

SEC. 13. If a penalty is imposed in the cases of section 4, it may be ordered that the judgment be advertised publicly at the expense of the offender.

If a penalty is imposed in the cases of section 7, the court shall grant to plaintiff the right to have the judgment publicly advertised within a certain time, at the expense of the defendant.

On the proposition of a defendant exculpated by the court, the latter may have such exculpation publicly advertised at public expense, unless the latter is laid upon the plaintiff.

When, in the cases of sections 1, 6, and 8, action has been brought for discontinuance, the court may pronounce in the judgment that the party winning the process shall have the right to publicly advertise the decreeing part of the judgment at the expense of the losing party.

The method of advertising shall be designated in the judgment.

SEC. 14. Besides the punishment inflicted in accordance with this law, a sum of not more than 10,000 marks ($2,380) may be ordered to be paid to the injured party, if he so demands. All persons sentenced to such fine shall be held as joint debtors. A fine excludes any further claims for damages.

SEC. 15. Civil procedures, in which any claims are brought, based upon this law, shall, in cases where the circuit court is competent as of first instance, go to the commercial division of such court. Procedure and decision in the last instance in the meaning of paragraph 8 of the introductory law to the law of judicial constitution shall be referred to the supreme court of the Empire.

SEC. 16. Persons who have no domicile in this country shall have a right to claim the protection of this law only so far as the state where his domicile is located grants similar protection to German traders, if notice thereof is published in the Imperial Law Gazette.

SEC. 17. This law shall take effect on July 1, 1896.

RAILWAYS OF BELGIUM.

History of railway building.—The first record of a project to construct a railway on Belgian territory bears the date of 1829. In that year, John Cockerill and several other manufacturers of Liege proposed to the Dutch Government the construction of an iron road from Antwerp to the Meuse. The revolution of 1830 and the events connected with the establishment of the Kingdom of Belgium interrupted the discussion of this proposition. In the month of October, 1830, however, these Liege manufacturers addressed to the provisional government a memorial in favor of a railway to connect the Scheldt and the Rhine.

By royal decree, dated August 24, 1831, Messieurs Simons and De Ridder, two talented engineers, were named to study the project of a railway between the Scheldt, Meuse, and Rhine. They immediately proceeded to England and consulted Robert Stephenson. February 10, 1832, they submitted to their Government the plan of a road from Antwerp to Cologne. On the 21st of the following month, a royal decree was published authorizing the sale at auction of the concession for a railway between Antwerp and Liege. For some reason, however, the proposed sale of this concession never took place. A party believing in the state ownership and management of railways was actively at work; its influence undoubtedly prevented the authorization of private companies. In March, 1833, Mr. Charles Rogier, representing this idea, presented to the Chamber of Deputies a law authorizing a loan by the State for the construction of the railway from Antwerp to Liege. After a lengthy and spirited debate upon the utility of railroads, the State-railway element prevailed and the project of the Government, extended by numerous amendments, was adopted. This action definitely settled the policy of Belgium in favor of state railways. Not only one line of road, but an entire system of railways was voted. On the 1st of May, 1834, this legislation received the royal sanction.

Mechlin was chosen as the center of the system; from that city, lines were to be constructed eastwardly toward the Prussian frontier by way of Louvain, Liege, and Verviers; northwardly, to Antwerp; westwardly, to Ostend, via Termonde, Ghent, and Bruges; and southwardly, to Brussels and the French frontier. The length of these various lines was estimated at 246¾ miles.

Exactly one year later, on May 1, 1835, the Government section was finished and the first train was drawn over the Brussels–Mechlin line. On May 5, 1835, this road was inaugurated with solemn ceremonies and general rejoicing. The other parts of the system were gradually completed. The easier lines were first built, and the more difficult soon followed. In 1836, the Antwerp line was in operation. In 1837, Ghent, Louvain, and Tirlemont were connected with Mechlin. In 1838, the iron road was pushed eastwardly to Ans, where it stopped abruptly before the descent of 350 feet, which was to be overcome in order to reach the Meuse. The same year, the

railway was extended westwardly to Ostend. In 1839, the Ghent–Courtrai and Louvain–St. Trond lines were opened. The total length of railway lines actually constructed and in operation in Belgium at the end of 1840 was 202 miles; at the end of 1844, they measured 347⅓ miles.

Until this date, all railways had been built by the Government. A radical change in the system of railway construction then occurred. The Government withdrew from the building of railroads and announced its intention to let the various concessions of railways to be built in the future to private companies. The conditions of these contracts are such that the road is built and operated by private capital for a certain term of years, never to exceed ninety; at the termination of the fixed period, or by reason of forfeiture or purchase, the railway reverts to the State, which henceforth assumes the management. In 1845 and 1846, English capitalists obtained the first concessions for Belgian railways. This invasion of foreign capital immediately led to the formation of several Belgian societies.

Although a law of July 19, 1832, had authorized the sale of concessions to private railways for a term of ninety years, prior to 1840 only six such privileges had been conceded, and these only for railways destined to transport the output of the mines.

The Antwerp–Ghent Railway, by way of St. Nicolas, was the first concession for a nonindustrial railroad; it was granted November 16, 1842. In 1845–46, however, nine concessions were awarded; one company only was able to construct its line in conformity with its contract, two failed entirely, while the other six asked modifications of their charters. Since 1846, several concessions have been granted to private companies, and, indeed, almost all the lines, without exception, have been built by such capital. Generally, however, for one reason or another, these private enterprises have not been successful, and, sooner or later, they have been absorbed by the State. For this reason, when we examine statistics, we find the length of road operated by the Government to be constantly increasing, even though the State scarcely ever builds a mile of road. On the other hand, we observe the length of the private lines remains approximately the same, with a tendency to diminish. The following table gives the details of this development:

Length of railway lines in operation in Belgium.

Year.	State.	Private companies.	Total.
	Miles.	*Miles.*	*Miles.*
1835	8	.....	8
1840	202	.....	202
1850	388	.....	388
1860	464	.....	464
1865	465	2,087	2,552
1870	540	.....	540
1875	1,222	1,057	2,279
1880	1,765	945	2,710
1885	1,954	906	2,860
1890	2,001	918	2,919
1894	2,044.3	920.8	2,965

From the foregoing statistics, it appears that there were in 1894, 2,044.3 miles of railways operated by the State and 920.8 miles worked by private companies. The total length of main railway lines, therefore, in operation in Belgium at the end of 1894 was 2,965 miles. There are at present thirteen private companies owning and operating lines in Belgium. Of the lines operated by the State, 918⅓ miles were built by the State and 898 miles have been purchased of private companies; 201 miles belonging to private companies are operated by the State on a rental or on a division of receipts, while 27 miles of road, the property of private companies, is passed over by trains of the State railways. Of the 2,044 total miles operated by the State, 1,219 miles are single track and 825 miles double track.

Relatively to its size, Belgium has more railroads than any other country of the world; its area is 11,373 square miles. With a total of 2,965 miles of railroad,* there are 26 miles of road for every 100 square miles. The country most nearly approaching this proportion is Great Britain and Ireland, where there are 16.778 miles of railway for every 100 square miles. The number of miles of railway per 10,000 inhabitants in Belgium is 4.73, which, however, is exceeded by Germany, with 5.45 miles, and by France, with 6.26 miles. For comparison with our own country, it may be stated that there are in the United States 4.913 miles of railway for every 100 square miles and 25.12 miles per 10,000 inhabitants.

Cost, receipts, and disbursements.—In the consideration of the other branches of this subject, the distinction between the State and private railways must always be borne in mind. An attempt, therefore, will be made to distinguish as far as possible between them in showing their respective status.

The total cost of the State railway system at the end of 1894 was officially stated as $271,822,300. On the basis of 2,044 miles of State railway, the total cost amounted to $132,985 per mile.

The cost of the private lines is not officially stated. The total amount, however, invested in all Belgian railways is estimated at $442,585,206.32, which gives, as a result, the average cost as $149,269.82 per mile.

The receipts of the State railways during 1894 amounted to $29,504,153.58 and the working expenses were $16,701,731.52, leaving a balance of $12,802,422.06. There was paid out of this latter sum $10,861,831.35 for outstanding debts, pensions, and interest, leaving a net gain for 1894 of $1,940,590.71.

This very excellent balance sheet is largely due to the reduced prices of material and supplies, as, for example, the prices paid for steel rails per ton in 1874, 1884, and 1894, respectively, was $84.88, $27.02, and $24.41; likewise, the price of coal per ton in these years was $3.37, $1.43, and $1.24, respectively.

*I regret that there seems to be an error in my report published in SPECIAL CONSULAR REPORTS, Vol. XII, p. 16, entitled Highways of Commerce, so far as regards the figures relative to Belgian railways. The only explanation must be in the misstatement by my authority of the facts therein given. The statistics mentioned in this present report are drawn directly from the report of the Belgian Minister of Railways, Posts, and Telegraphs for 1894.

The private companies show the following general balance sheet in 1894:

Receipts	$8,017,213.54
Operating expenses	3,876,787.91
Net balance	4,140,425.63

Rolling stock, employees, and stations.—The State operated at the end of 1894, 2,133 locomotives; the private companies, 551; total, 2,684. The cars owned by the State numbered 50,528; by the companies, 14,854; total, 65,382; of this total, 6,303 cars were for passengers and 59,079 for the freight traffic. The total number of persons employed in the service of the State railways was 43,768; in the service of the companies, 10,952; total, 54,720. There were 935 stations or stops on the State lines and 434 on the private roads; total, 1,369.

The total distance traveled by the trains of the State was 26,019,495 miles; by the trains of the private companies, 6,881,902 miles; total, 32,901,397 miles.

Passengers and freights.—In 1893, there were 74,773,172 passengers carried on the State railways and 22,165,605 on the companies' lines; total, 96,938,777. The total income from passenger fares was, for the State roads, $9,814,319.68; for the private roads, $2,494,409.16; total, $12,308,728.84. The average fare paid by each passenger to the State was 13¼ cents, while on the private lines the average fare was 11 cents. The average distance traveled per passenger on the State lines was 13⅜ miles.

The results of the freight traffic for 1894 are shown by the following table:

Description.	State lines.	Private lines.
Freight transported.....tons...	29,509,625	.....
Receipts from freight	$17,616,753.74	$5,034,155.84
Horses and cattle.....number...	56,846	.....
Receipts from animals	$259,067.20	$57,073.57

Accidents.—During 1894 there were 69 derailments or collisions on the State railways, 19 of passenger trains and 50 of freight trains. The number of victims killed or injured by these accidents amounted to 43, 27 being employees and 16 passengers; of the latter, not one was killed and 12 only were severely wounded; of the employees, 1 was killed, 18 wounded, and 8 bruised.

The accidents to passengers due to their own imprudence numbered 71, 6 being killed, 47 wounded, and 18 bruised. Other persons, not passengers, to the number of 109 were the victims of accidents, 59 being killed, 38 wounded and 12 bruised. Among employees, 35 were killed, 573 wounded, and 229 bruised, being a total of 837 during the year.

The private railways did not report a single derailment or collision as occurring on their lines during 1894, nor, indeed, during the preceding year; their casualties of all kinds amounted to 91; of these, 5 were passengers, of whom 1 was killed by his own imprudence, 44 were employees, of whom 14

were killed, and 42 were persons foreign to the service, of whom 24 were killed.

These last-quoted figures speak eloquently for the management of all Belgian railways. When out of 96,938,777 persons carried, we have not the death of a single passenger due to the railway's negligence to note, and only 7 such deaths by the passengers' own imprudence, is high praise of the method of organization and operation of the railway system.

HENRY C. MORRIS,

GHENT, *April 10, 1896.* *Consul.*

INDUSTRIES AND WORKING PEOPLE OF GHENT.

The most self-evident fact to a stranger passing through the streets of Ghent is the preponderance of the working classes in its population. It is a city composed for the most part of laboring people, and is dependent for its prosperity upon the products of their toil; the position of chief manufacturing center of Belgium is generally accorded to it. A brief examination of the number and condition of its factories and their employees may, therefore, be of some interest. Until very recently, however, official statistics relative to this subject have not been collected; indeed, even now, almost all such data owe their compilation to private initiative. One of the most comprehensive works of this nature has been recently published by Mr. Louis Varlez, an attorney and social scientist of this city. His figures are based upon the census of 1890, when the population was only 148,000; it is now 157,000. Nevertheless, as the change has only been relative and the same proportions continue, we may accept his data with confidence. Then, again, they are the latest which exist or which it is possible to compile until the next general census of 1900. I therefore deem it interesting to make the following brief synopsis of his work, only published last year, which is entitled the Social Plan of Ghent.

CONDITIONS AT GHENT.

Although constantly developing, the city of Ghent is far from keeping pace with other European cities in the increase of population which characterizes the second half of the nineteenth century. Forty years ago, Ghent was the second city of Belgium; now it is only the fourth; Antwerp and Liege have successively passed it. Ghent lacks the attraction which induces country people to leave their farms and settle in a city; a rapid industrial development is wanting. No new large industrial establishments are being founded; the old, indeed, continue to develop more and more and are making Ghent a large manufacturing city, but powerful initiative is, so to speak, paralyzed. If the three great branches of Ghent industry—flax spinning, cotton industry, and metallurgy—are considered, it is found that of the 20 principal establishments, not one has been founded during the last twenty

years. Two were founded during the last century and employ 975 hands; five between 1815 and 1830, employing 2,874 hands; four between 1830 and 1840, employing 5,313 hands; three between 1850 and 1860, employing 2,729 hands; three in 1864, employing 2,234 hands; one was founded in 1873 and employs 687 hands; and two were founded at a date not indicated, but prior to 1875, and employ 775 hands. All these twenty establishments, it will be observed, were founded before 1877, and employ a total of 15,547 hands. The 3,259 other establishments employ only 19,862 persons.

In the other branches of industry not one can compete with the twenty establishments named. During the late years, however, the weaving industry has constantly developed. Ghent, therefore, is a city whose industrial development is in the past and forms an excellent comparison with Mannheim, a city of recent industrial growth. If the number of new establishments here is very limited, the old ones nevertheless continue to rapidly develop, so that the industrial population of Ghent is one of the densest. In total population, Ghent is the fourth city of Belgium, but for the number of working people engaged in manufactures, it is first.

City.	Factory employees.			Per 1,000 inhabitants there are—		
	Men.	Women.	Total.	Workmen.	Workwomen.	Total.
Ghent	21,850	13,429	35,279	146	89	235
Liege	25,108	6,421	31,581	164	42	206
Brussels	21,293	12,000	33,293	118	66	184
Antwerp	19,541	4,541	24,082	85	19	105

Ghent owes its leading position to the great number of women employed in its factories.

ENUMERATION OF INDUSTRIES.

According to the census of 1890, the principal industries of Ghent were:

Description.	Owners.	Clerks.	Workmen	Workwomen.
Vegetable textile industries	120	242	7,121	8,814
Animal textile industries	7	2	70	97
Manufacture of clothing	1,130	5	1,721	4,116
Carpentry, hat making, and tobacco manufacturing	425	24	2,552	162
Building industries	384	8	1,900	21
Metal industries, tinners, plumbers, etc	328	14	907	10
Vegetable-supplying industries	491	18	923	26
Machine manufacturing	52	9	579	4
Printing	88	11	409	6
Mineralogical and chemical industries	62	8	240	5
Car and wagon manufacturing	75	4	340	.....
Metallurgical industries	33	4	323	.....
Miscellaneous	434	54	4,814	157
Total	3,689	403	21,899	13,418

The textile industries, it will be observed, employ nearly one-half of the working population of Ghent (16,082 out of 35,317), followed by the clothing industry (5,837). This preponderance is the greater, if we consider the women hands separately; of 13,418 workwomen, 13,027 are employed in these two branches. The young girl who, in Ghent, must become a working woman—and we notice later that there are as many girls as boys earning their daily bread by work in manufacturing establishments—has only a choice between the textile factory and the dressmaking or milliner's trade.

LOCATION OF THE WORKSHOPS.

With the exception of one factory, all the largest establishments of the city are situated on its outskirts, and, by curious coincidence, to the north of the city. Eleven of the larger establishments are located very close to each other and employed, in the year 1891, 11,000 workmen, a number which has considerably increased since that date. Naturally, it is in the districts which contain these large establishments that the largest proportion of workmen reside. On that side of the city which contained, in 1894, 60,529 inhabitants there were counted 18,803 factory hands, or one to every 3.2 inhabitants, while in the other districts of the city, containing 89,915 inhabitants, there were only 10,094 factory hands, or one for 8.9 of the total population.

PLACE OF RESIDENCE.

The most important manufacturers well understand how necessary space and open air are for business and health, and have consequently established their factories on the outskirts of the city. The same is not true of the employees who, on the contrary, are moving from the outskirts to the center of the city, where they continue to dwell.

In the two central districts of the city, where only 2,549 workmen find work, 5,639 factory hands live, while in another district, located almost in the open country and where certainly space and air are not wanting, 4,057 workmen are employed, but only 2,981 reside. The danger of this agglomeration to the laboring classes is, it is true, considerably diminished by reason of the custom of the workingman's family to occupy an entire house. Each house in Ghent, on an average, contains only 5 inhabitants, while at Liege each house contains 8, Antwerp 7, and Brussels 10 persons.

CHARACTER OF THE INDUSTRIAL ESTABLISHMENTS.

In the three main branches of Ghent industry—flax spinning, cotton spinning and weaving, and metallurgy—the 78 principal establishments count 18,985 workmen; the 12 incorporated companies employ 10,568 workmen and workwomen, or 881 per establishment; the 18 limited companies employ 4,901 workmen and workwomen, or 272 per establishment; the 48 private firms employ 3,517 workmen and workwomen, or 71 per establishment. Besides these establishments, one bleachery, some sugar factories, the gas and street railway company, and some cooperative societies, there are no stock companies at Ghent.

CLASSIFICATION OF INDUSTRIES.

How shall we divide 35,327 workmen among the large, medium, and small industrial establishments?

Owing to the insufficiency of statistics upon this subject and the impossibility of determining the volume of business of each of the 3,279 establishments, a somewhat arbitrary and empiric division must suffice. The basis of division is an investigation made in March, 1891, and the official census of December 31, 1890.

By "large industry" we are to understand every establishment employing more than 100 workmen, and, in this respect, an error of any importance is impossible; by a "medium industry" we mean every other establishment named having between 10 and 100 workmen; for "small industry" we have been forced to take the difference between the number of workmen employed in the 212 principal establishments and the number of workmen residing at Ghent December 31, 1890. In this last total are included all day laborers, dock hands, and workmen without regular employment, not including those in domestic service. Upon this basis the following table has been prepared:

Branch of industry.	Large industry.				Medium industry.			
	Owners.	Workmen.	Workwomen.	Total.	Owners	Workmen.	Workwomen.	Total.
Flax spinning	9	2,877	5,468	8,345	12	277	283	560
Cotton spinning and weaving	18	4,687	2,939	7,626	15	588	318	906
Rags, cotton belting, and bleacheries	2	240	159	399	17	157	52	209
Metallurgy	4	914	.....	914	20	547	.....	547
Amber and tobacco	3	305	106	411	29	815	16	831
Printing	1	110	.....	110	14	317	.....	317
Chemical industries	.....	.....	.....	.....	4	214	.....	214
Building and cement	2	235	.....	235	40	1,304	.....	1,304
Food supplies	2	254	8	262	12	232	59	291
Clothing	1	58	97	155	2	58	51	109
Miscellaneous	.....	.....	.....	.....	13	451	81	532
Total	32	9,680	8,177	18,457	178	4,960	860	5,820

Branch of industry.	Small industry.				Grand total.
	Owners.	Workmen.	Workwomen.	Total.	
Flax spinning, cotton spinning and weaving, rags, cotton belting, and bleacheries	63	1,635	308	1,943	16,120
Metallurgy	473	1,806	14	1,820	3,281
Amber and tobacco	468	2,511	40	2,551	3,793
Printing	73	152	6	158	585
Chemical industries	58	195	5	200	414
Building and cement	342	1,013	21	1,034	1,573
Food supplies	672	770	42	812	1,365
Clothing	1,127	1,605	3,968	5,573	5,837
Miscellaneous	235	823	4	827	1,359
Total	3,511	10,510	4,408	14,918	35,327

This statement is very far from being perfect, but it is the only one possible which gives any idea of the relative importance of the large, medium, and small industries. To recapitulate, more than one-half of the men and more than two-thirds of the women work in establishments employing more than 100 each. More than nine-tenths of the hands employed in the large industries belong to the textile factories.

EMPLOYMENT OF WOMEN.

Owing to the great development of the textile industry, female labor is very extensively employed. For 1,000 men employed at Ghent, there are 618 women; at Brussels, 586; Liege, 261; and Antwerp, 233. In all Belgium, the proportion is 323 women to 1,000 men. The importance of female labor is increasing with the size of the establishments. It is especially noticeable in the textile industries. The textile factories having less than 100 hands each employed 1,022 men and 653 women; those giving work to 100 to 1,000 workmen employ 3,716 men and 3,411 women; those employing more than 1,000 workmen each count 4,088 men and 5,155 women on their pay rolls. For all Belgium, the proportion is for 100 men, 64 women in the small industries, 92 in the second category, and 125 in the very large establishments. As may be noticed by the preceding table, nearly all the women included in the large industries are employed in the textile factories; all those in the small industries, in the manufacture of clothing. The workwomen are generally very young and very rarely over 40 years of age. It is exclusively due to the early retirement of women from the factories that men maintain their numerical preponderance.

It is estimated, indeed, that the number of males between 16 and 20 years of age employed at Ghent is 4,000; that of females of the same age is 3,600. The proportion of married women is small; of 3,000 women, for instance, we have found only 780 married; of workmen, on the contrary, the proportion of married is nearly two-thirds.

BIRTHPLACE OF WORKMEN.

Official statistics do not furnish any information on this subject; they indicate only very vaguely the place of origin of the population of Ghent as an entirety:

Description.	Men.		Women.		Total.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Natives of Ghent	45,992	309	50,498	339	96,490	648
Natives of Belgium	21,972	148	25,963	174	47,935	322
Foreigners	1,894	13	2,530	17	4,424	30
Total	69,858	470	78,991	530	148,849	1,000

The men, considered apart, gave the following percentages: Natives of Ghent, 658; natives of Belgium, 315; foreigners, 27; total, 1,000.

The census of 1890 does not furnish any other information. Of the 14,134 male workmen belonging to the councils of industry and of labor, and more than 25 years of age, in the exercise of their trades and living four years in their district, there are counted 9,011 born in the city of Ghent, or 638 per cent; 594 born in the canton of Ghent, or 42 per cent; 3,442 in other parts of the province of East Flanders, or 243 per cent; 952 elsewhere in Belgium, or 67 per cent; and 137 in foreign countries, or 10 per cent. Among the 741 boys of 12 to 16 years of age and the 1,259 girls of 12 to 21 years of age who were employed in 1894 in the workshops of Ghent, there were 1,548 natives of Ghent, or 778 per cent; 88 natives of the canton of Ghent, or 44 per cent; 261 natives of the province of East Flanders, or 131 per cent; 50 natives of other parts of the country, or 25 per cent; and 43 foreigners, or 22 per cent. To obtain the proportions of Ghent workmen, considering that only one-fourth of the workmen are less than 25 years old, the following table may be prepared:

Description.	Workmen.	Total population.
	Per cent.	*Per cent.*
Natives of Ghent	673	658
Natives of Belgium	314	315
Foreigners	13	27
Total	1,000	1,000

Most of the workmen coming to Ghent migrate from the more western portions of Belgium; the great majority, it may also be remarked, come from country districts—about four-fifths; only the other one-fifth claim a city as their birthplace. The greater proportion of those born outside of Ghent are employed in the chemical, alimentary, building, transportation, and flax-spinning industries, in all which industries the least wages are paid. On the contrary, the proportion of those born in Ghent is greatest in the best-paid industries, as, for instance, printing, cotton spinning, industrial art manufactures, and machine making. These are the four best-paid industries and also require the longest apprenticeship.

WAGES IN GHENT.

It may be here interesting to note the wages paid in these different trades. In the machine-making industries, workmen receive from 7 to 9 cents per hour; in mechanical and tool-making trades the pay is from 5 to 7 cents per hour; for cotton spinning, wages of male adults range from 70 to 94 cents per day, and in the weaving industries, from 54 to 57 cents per day; for printers, wages run from 70 to 90 cents per day; for flax spinning, adults' wages are from 48 to 58 cents per day. The day, it must be remembered, is at least eleven hours, in many cases twelve hours, in length.

MARRIAGES.

The employers of 5,660 working people report the number of their employees married or unmarried. These figures, in connection with the statistics for the population, as established by the census of 1890, give the following result:

Population of Ghent.

Age.	Men.		Women.		Total.	
	Single.	Married.	Single.	Married.	Single.	Married.
12 to 13 years	2,718	.....	2,857	.....	5,575	.....
14 to 15 years	2,686	.....	2,990	1	5,676	1
16 to 20 years	7,013	37	7,600	198	14,613	235
21 to 40 years	10,034	11,108	11,658	12,117	21,692	23,225
41 to 50 years	1,452	5,868	2,735	5,798	4,187	11,666
51 to 60 years	1,254	4,419	3,029	4,202	4,283	8,621
61 and over	2,372	3,527	5,374	2,791	7,746	6,318
Total	27,529	24,959	36,243	25,107	63,772	50,066

Working population.

Age.	Men.		Women.		Total.	
	Single.	Married.	Single.	Married.	Single.	Married.
12 to 13 years	67	.....	39	.....	106	.....
14 to 15 years	112	.....	83	.....	195	.....
16 to 20 years	293	2	211	17	504	19
21 to 40 years	344	765	155	189	499	954
41 to 50 years	47	365	27	30	74	395
51 to 60 years	10	189	7	6	17	195
61 and over	12	72	.....	.....	12	72
Total	885	1,393	522	242	1,407	1,635
Total of 5,660	1,344	1,942	1,644	730	2,988	2,672

The percentage of these figures was:

Working population.

Age.	Men.		Women.		Total.	
	Single.	Married.	Single.	Married.	Single.	Married.
	Per cent.	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*
12 to 13 years	76	.....	75	.....	75	.....
14 to 15 years	127	.....	159	.....	139	.....
16 to 20 years	331	1	404	71	358	12
21 to 40 years	388	549	297	781	355	583
41 to 50 years	53	262	52	124	52	242
51 to 60 years	11	136	13	24	13	119
61 and over	14	52	.....	.....	8	44
Total	1,000	1,000	1,000	1,000	1,000	1,000

Population of Ghent.

Age.	Men.		Women.		Total.	
	Single.	Married.	Single.	Married.	Single.	Married.
	Per cent.	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*
12 to 13 years	98	.....	79	.....	87	.....
14 to 15 years	98	.....	89	.....	80	.....
16 to 20 years	855	1	208	8	229	5
21 to 40 years	364	444	321	482	349	464
41 to 50 years	53	235	75	231	66	232
51 to 60 years	46	179	83	167	68	172
61 and over	86	141	145	112	121	127
Total	1,000	1,000	1,000	1,000	1,000	1,000

It is to be observed that among the laboring classes the great majority of the married are less than 40 years old, both men and women, while in the total population of the city the majority of married in both sexes exceeds the age of 40 years. The results given in the following table are still more striking. Although it relates only to men, the women furnish analogous results, for they generally quit the workshops shortly after marriage.

Age.	Population of Ghent.			Workmen.		
	Single.	Married.	Total.	Single.	Married.	Total.
	Per cent.	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*
16 to 20 years	995	5	1,000	993	7	1,000
21 to 40 years	474	526	1,000	310	690	1,000
41 to 50 years	198	802	1,000	114	886	1,000
51 to 60 years	221	779	1,000	99	901	1,000
61 and over	404	596	1,000	143	857	1,000

These various statistics authorize the statement that workmen marry younger and more frequently than those belonging to the other classes of the population. Half of the citizens of Ghent between 21 and 40 years of age are celibate, while among workmen the proportion of unmarried is only one-third. This proportion is true for all ages.

BIRTH RATE.

The average birth rate at Ghent in 1893 was 28.6 per 1,000 inhabitants; the proportion of legitimate to illegitimate children was 4,001 to 487. In 1890, for every 1,000 inhabitants there were born 30.7 children at Ghent, 34.6 at Antwerp, 28.5 at Brussels, and 25 at Liege. Among these, there were 13 per cent illegitimates at Ghent, 16 per cent at Antwerp, 33 per cent at Brussels, and 25 per cent at Liege.

In order to determine the birth rate among the different classes, the streets of the city may be classified into four groups: those inhabited for the most part by the rich; those of the middle classes; those where hospitals, barracks, and other public buildings are located; and those in which chiefly the

laboring classes reside. Making this division, we find the population and births to be:

Description.	Wealthy streets.	Middle-class streets.	Hospital, etc., streets.	Working-men's streets.
Population	17,716	11,563	10,810	113,714
Births:				
Legitimate	262	216	133	3,383
Illegitimate	20	23	20	401
Total	282	239	153	3,784

Or, out of 1,000 inhabitants there were:

Description.	Wealthy streets.	Middle-class streets.	Hospitals, etc., streets.	Working-men's streets.
	Per cent.	*Per cent.*	*Per cent.*	*Per cent.*
Legitimate	14.8	18.7	13.2	29.7
Illegitimate	1.1	2	2	3.5
Total	15.9	20.7	15.2	33.2

From this statement it will be seen at once that the birth rate among the laboring classes is twice that of the rich.

The following figures show approximately the size of workingmen's families: Of 1,579 males out of work in the winter of 1891–92, 592 had no living children, 234 had one child, 224 had two children, 153 had three, 127 had four, 108 had five, 71 had six, 36 had seven, 17 had eight, 11 had nine, 2 had ten, and 1 had eleven.

MORTALITY.

In 1890, the general mortality per 1,000 inhabitants was 26.5 at Ghent, 27.2 at Brussels, 23.2 at Antwerp, and 21.7 at Liege. The death rate for children is especially large at Ghent. In 1893, there were 1,698 deaths of children under 5 years of age, while all other deaths only amounted to 2,022. Nearly half of the mortality is among children under 5 years of age. For the working classes, the rate of mortality may be obtained in the same manner as the number of births, by dividing the streets into four classes. The following table results for 1893:

Description.	Wealthy streets.	Middle-class streets.	Hospitals, etc., streets.	Working-men's streets.
Population	17,716	11,563	10,810	113,714
Deceases	299	211	365	2,915
Percentage of 1,000 inhabitants	17.2	18.1	34.1	25.6

The death rate among the poor is accordingly considerably in excess of that among the rich. It should, however, be observed that the deaths of those belonging to the latter class exceed the births.

AGES OF WORKMEN.

An investigation of the ages of working men and women employed in the factories of Ghent, as compared to the total population, gives the following results:

Age.	Population of Ghent.			Percentage of workers.		
	Men.	Women.	Total.	Men.	Women.	Total.
12 to 13 years	2,718	2,857	5,575	513	261	774
14 to 15 years	2,686	2,991	5,677	1,351	1,033	2,384
16 to 20 years	7,050	7,798	14,848	3,855	3,448	7,303
21 to 40 years	21,142	23,775	44,917	12,475	6,061	18,536
41 to 50 years	7,320	8,533	15,853	3,660	462	4,122
51 to 60 years	5,673	7,231	12,904	1,872	133	2,005
61 and over	5,899	8,165	14,064	893	28	921
Total	52,488	61,350	113,838	24,619	11,426	36,045

These statistics show that the normal age of labor, the period when the proportion of workmen is the largest, relative to the total population of the same age, is between 16 and 20 years of age. In assuming, therefore, 1,000 as the number of this age employed, we find the proportion of workmen of other ages, as compared with the total population, to be:

Age.	Population of Ghent.			Percentage of workers.		
	Men.	Women.	Total.	Men.	Women.	Total.
12 to 13 years	385	368	375	133	76	106
14 to 15 years	381	383	382	350	299	326
16 to 20 years	1,000	1,000	1,000	1,000	1,000	1,000
21 to 40 years	2,999	3,049	3,025	3,236	1,758	2,528
41 to 50 years	1,038	1,094	1,068	926	134	564
51 to 60 years	804	927	871	486	38	274
61 and over	837	1,047	947	232	8	126

An examination of these figures proves that:

(1) Almost as many females as males enter the factories, to wit, between 16 and 20 years of age, 3,855 men and 3,448 women.

(2) The period spent in the factory is shorter for the women than for the men.

(3) The women leave the factory much earlier in life; of 6,569 factory women, only 19 were found aged more than 60 years.

(4) The girl begins factory labor a little later in life than the boy. The

average age of boys under 16 years is 13 years, 9 months, and 17 days; that of girls under 16 years is 14 years and 17 days.

(5) Even among the men, the proportion of workmen employed decreases rapidly with age. Not more than one-fourth of the workmen continue after 60 years of age.

WORKING AGES IN THE VARIOUS INDUSTRIES.

Flax industry.—The flax industry is one of the more recently established at Ghent. In 1812, there were only two establishments, with 150 employees. In an investigation made at this date, it is declared that the city factories could not compete with country workmen manufacturing by hand in their own houses. According to a report in 1841, the condition of the flax industries was:

Description.	Ghent.	East Flanders.	Belgium.
Cloth weavers	11,103	32,718	74,700
Flax spinners	41,071	122,226	280,396

At this epoch, the transformation occurred. In 1846, the industrial census for the city of Ghent gave the following figures for those employed in this manufacture:

Age.	Men.	Women.	Total.	Percentage.
Under 9 years of age	2	27	29	1
Between 9 and 12 years	65	166	231	8
Between 12 and 16 years	198	374	572	19
Over 16 years	729	1,318	3,047	72
Total	994	1,885	2,879	.....
Percentage	34	66	.....	100

In 1880, the trade census for the arrondissement (a division corresponding to our township) of Ghent resulted as follows:

Age.	Men.	Women.	Total.	Percentage.
Under 14 years of age	481	689	1,170	13
From 14 to 16 years	430	980	1,410	15
Over 16 years	2,177	4,262	6,439	72
Total	3,088	5,931	9,019	.....
Percentage	34	66	.....	100

The proportion of adults and of women remained, therefore, unchanged. For 1893, the percentages were: Under 14 years of age, 319, or 3.5 per

cent; from 14 to 16 years, 1,006, or 8.5 per cent; over 16 years, 7,651, or 88 per cent; 2,890 men, or 31 per cent; 6,327 women, or 69 per cent.

The proportion of adults and of women is increasing. Preparing a table of the ages of those employed in this branch of industry, as compared with the total population of the city, the figures are:

Age.	Population of Ghent.			Workers.		
	Men.	Women.	Total.	Men.	Women.	Total.
12 to 13 years	2,718	2,857	5,575	90	118	208
14 to 15 years	2,686	2,991	5,677	295	480	775
16 to 20 years	7,050	7,798	14,848	412	1,256	1,668
21 to 40 years	21,142	23,775	44,917	751	2,644	3,395
41 to 50 years	7,320	8,533	15,853	253	171	424
51 to 60 years	5,673	7,231	12,904	185	48	233
61 and over	5,899	8,165	14,064	79	15	94
Total	52,488	61,350	113,838	2,065	4,732	6,797

The characteristic features are the enormous proportion of women and children and the great number of boys of 14 to 15 years of age employed. The flax-spinning establishments train three or four times as many apprentices as they can employ as adults. This fact largely accounts for the low wages paid.

Cotton industries.—This manufacture has been long established at Ghent. One of the most important factories at present was founded in 1799. In 1808, there were two other establishments employing 1,269 workmen, while six other spinning mills at Ghent gave work to 1,498 workmen and six weaving establishments counted 994 employees.

The Napoleonic wars precipitated a crisis in the Ghent cotton trade, but these wounds soon healed under the Dutch domination. In 1816, the cotton mills employed 5,000 weavers and 5,315 spinners; Ghent was then the "Manchester of the Netherlands."

With the revolution of 1830, came a new crisis, which was overcome with difficulty. From 1830 to 1835, the number of spindles in activity fell from 191,736 to 54,894. The industrial census of 1846 indicates the number of cotton hands as follows:

Age.	Men.	Women.	Total.	Percentage.
Under 9 years	126	18	144	2
From 9 to 12 years	319	168	487	8
From 12 to 16 years	568	267	835	13
Over 16 years	3,041	1,568	4,609	77
Total	4,054	2,021	6,075	
Percentage	67	33		100

In 1880, the figures were:

Age.	Men.	Women.	Total.	Percentage.
Under 14 years	320	303	623	8
From 14 to 16 years	514	411	955	12
Over 16 years	4,179	2,443	6,622	80
Total	5,013	3,157	8,200	
Percentage	62	38		100

In 1891, there were 4,753 men, or 63 per cent, and 2,726 women, or 37 per cent, employed. Of the 3,929 workers whose ages were known in 1894, there were:

Age.	Population of Ghent.			Cotton workers.		
	Men.	Women.	Total.	Men.	Women.	Total.
12 to 13 years	2,718	2,857	5,575	52	56	108
14 to 15 years	2,686	2,991	5,677	126	135	261
16 to 20 years	7,050	7,798	14,848	371	403	774
21 to 40 years	21,142	23,775	44,917	908	891	1,799
41 to 50 years	7,320	8,533	15,853	397	137	534
51 to 60 years	5,673	7,231	12,904	263	33	296
Over 60 years	5,899	8,165	14,064	83	4	87
Total	52,488	61,350	113,838	2,200	1,659	3,859

Other industries.—The following tables show for other industries the proportion of employees of different ages for every 1,000 employed:

Men.

Age.	Population of Ghent.	Flax.	Cotton.	Printing.	Other industries.	Without work.	Total number of workmen.
12 to 13 years	51	44	24	63	1	1	21
14 to 15 years	50	143	38	94	121	9	55
16 to 20 years	134	200	190	194	128	163	156
21 to 40 years	402	364	417	508	463	534	507
41 to 50 years	139	122	182	78	170	143	149
51 to 60 years	108	89	111	39	78	110	76
Over 60 years	116	38	38	24	39	40	36
Total	1,000	1,000	1,000	1,000	1,000	1,000	1,000

Women.

Age.	Population of Ghent.	Flax.	Cotton.	Other industries.	Total number of workwomen.
12 to 13 years	47	25	34	.....	23
14 to 15 years	49	101	81	40	90
16 to 20 years	176	266	243	456	302
21 to 40 years	338	559	537	480	531
41 to 50 years	139	36	83	12	40
51 to 60 years	118	10	20	12	12
Over 60 years	133	3	2	.....	2
Total	1,000	1,000	1,000	1,000	1,000

Such are the principal details of a study of the conditions existing among the working people, especially the factory hands, in the chief manufacturing center of Belgium. It may not be uninstructive to compare these figures with similar data compiled among the laboring classes in some of the important manufacturing centers of the New World. If such comparison tends to self-satisfaction or the amelioration of the lot of some of my fellow-countrymen, the publication of these statistics will not be without avail.

HENRY C. MORRIS,

GHENT, *May 16, 1896.* *Consul.*

VACATION COLONIES IN SWITZERLAND.

It is now just twenty years since one of the most benevolent movements for the benefit of poor children was inaugurated in the city of Zurich, and it has grown to such proportions and has been emulated by so many European countries, as well as in other parts of the world, that it may be well to describe it. I refer to the "Ferien-Colonien" (vacation colonies), to which poor school children, needy of recuperation for some reason or other, are taken to spend their summer vacations.

These places are selected carefully and usually situated in the mountains, where the air is pure and good lodging and good, strong food are provided for, free of all charges. The founder of these colonies is the well-known philanthropist Rev. W. Bion, a Zurich clergyman. This gentleman was formerly a minister in the small, mountainous canton of Appenzell, from whence, in 1873, he removed to Zurich. He soon learned that the city air did not suit his five children, accustomed, as they were, to inhale the pure air of their native mountains. For several successive summers he made them spend vacation time in their former home, whence, after a month's stay, they regularly returned with greatly improved health and spirits.

This experience set him to thinking that, if his own children, who were better situated than many others in regard to care and food, derived so much benefit from a stay in the high rural regions, how much good would it do

to the children of the poor who are compelled to spend their vacations in the same dull, putrid air of the narrow city streets in which they are forced to live the year round, most of them getting poor food and but scanty care.

The result of these reflections was an advertisement in the Zurich daily press, requesting friends of children to make voluntary contributions in order to carry out the project he had matured and well explained in his advertisement. The first answers to his request were discouraging, but did not temper his ardor, because of his conviction that when a man undertakes a philanthropic work with the pure motives only to help the poor, he is bound to succeed in the end.

Mr. Bion was soon the recipient of communications in which his philanthropic undertaking was highly praised and at the same time he was encouraged by contributions amounting, as a beginning, to a sum of 2,340 francs ($468), which permitted a start in the first year (1876) and resulted in sending 68 boys and girls, divided into three colonies, to three different points in the canton of Appenzell, each colony for a period of fourteen days. Mr. Bion was somewhat assisted by the school boards and some of the physicians of the city of Zurich, as well as by individual contributors.

The following table will best show to what extent the good work has taken root on Swiss soil:

Year.	Number of colonies.	Number of children.	Year.	Number of colonies.	Number of children.
1876	3	68	1886	49	1,128
1877	3	94	1887	46	1,137
1878	16	242	1888	52	1,310
1879	21	382	1889	54	1,407
1880	27	536	1890	54	1,417
1881	37	828	1891	57	1,555
1882	45	921	1892	60	1,671
1883	44	943	1893	62	1,804
1884	46	1,056	1894	66	1,969
1885	47	1,063	1895	73	2,198

The number of children sent to these recuperation colonies during the past twenty years was:

From—	Number.	From—	Number.
Zurich	4,436	Bienne	262
Basle	4,516	Herisau	30
Aarau	476	Toess	311
Berne	3,254	Riesbach	62
Geneva	1,478	Waedensweil	97
Coire	345	Vevey	165
Neufchatel	1,748	Glarus	20
Schaffhausen	555	Lucerne	123
Winterthur	1,909	Burgdorf	25
Enge	23	Soleure	58
St. Gall	599	Zofingen	22
Lausanne	944	Total	21,729
Hottingen	71		

The means of the managing committees not being sufficient, as a rule, to send all of the needy children to the colonies, such as show the greatest need therefor, on account of poor health, are selected, while those compelled to remain at home are provided with fresh milk and bread twice a day, mornings and evenings, in order to compensate them somewhat for the loss of the vacation trip. They can thus enjoy a milk cure during vacation, lasting from three to four weeks, which proves very beneficial. The children participating in such milk cures numbered as follows:

Year.	Number.	Year.	Number.
1880	42	1889	1,571
1881	61	1890	1,770
1882	135	1891	2,045
1883	507	1892	2,207
1884	876	1893	4,390
1885	1,198	1894	4,286
1886	1,543	1895	4,290
1887	1,883	Total	28,344
1888	1,590		

The example of Switzerland was soon emulated by other countries, especially by Germany, where one hundred and twenty-five cities have adopted the plan and established colonies. The following number of children were cared for during vacation time in that country:

Year.	Number.	Year.	Number.
1885	13,907	1891	28,065
1886	15,953	1892	28,760
1887	18,259	1893	28,772
1888	20,074	1894	29,295
1889	22,699	Total	231,611
1890	25,827		

Other European countries, namely Spain, Italy, Austria-Hungary, France, the Netherlands, England, Denmark, Belgium, Russia, and on the American continent, the United States and the Argentine Republic, have established vacation colonies in certain localities, and it is desirable that this benevolent movement shall go on increasing all over the world.

Close attention from year to year has been paid to the progress and results obtained from the Swiss colonies, so as to ascertain the direct benefits derived from these periodical summer vacations by the participants. Among the particular points closely studied are: Increase of weight of the attending children, as compared with those remaining at home; general improvement in health, strength, and purity of blood, especially of those suffering from anæmia (poor blood); visible improvement in intellect, as well as increased capacity and willingness to study, etc.

It would lead too far to enumerate here the good results obtained by a four-weeks' attendance at the various vacation colonies, but I would add that

the increase in weight of the participants, as carefully observed, has been, in general, from seven to eight times greater than of those compelled to remain home during the same period.

The table below shows, after a close study made by the Zurich health officer and observed on thirty-four children, the condition of their blood before and after the vacation period, as well as at several later intervals.

Condition of the children's blood.

Description.	Blood coloring.	Blood corpuscles.
1. Before departure to the colonies:	*Per mille.*	*Per mille.*
Boys	748	725
Girls	756	722
2. Immediately after return:		
Boys	886	911
Girls	959	953
3. Two months after return:		
Boys	820	884
Girls	863	924
4. Four months after return:		
Boys	869	935
Girls	903	982

The children are always accompanied to the colonies by teachers or other interested adults and remain while there under constant supervision. Their lodgings, specially prepared for that purpose, are composed of large, well-ventilated bedrooms, dining rooms, and play rooms; in some of them, bath rooms, etc. The food is very nourishing and healthful, and consists of an abundance of milk and milksops, meat, vegetables, etc., and the location is such as to allow of daily walks and exercise in the open air in forests and meadows, offering, at the same time, a beautiful view of Swiss scenery of mountains and lakes.

In 1895, the city of Zurich sent 448 children to nine colonies in the high regions of the cantons of Appenzell, St. Gall, and Zurich, accompanied and marshaled by 40 adults, most of them teachers, and it is said that this year's number will be still greater.

One of the Zurich colonies, the "Schwæbrig," which is situated in the canton of Appenzell, has been bought and transformed into a regular sanitarium, where, in 1895, 208 children were cared for outside of the vacation time, between May and November. These children, on account of poor health, needed a longer recuperation and remained there from four to twelve weeks, or until they had recovered their health.

The means to support these colonies are furnished, first and principally, by voluntary contributions; second, by contributions from the State as well as municipal governments. In Switzerland, a part of the profits derived from the federal alcohol monopoly, the net proceeds of which are apportioned among the cantons and applied to various benevolent purposes, is set aside

and contributed by the cantonal governments to these colonies. In Zurich, theater performances, concerts, fairs, etc., are held during the winter months, the proceeds of which go to swell the fund of the colonies.

EUGENE GERMAIN,

ZURICH, *July 29, 1896.* *Consul.*

GERMAN TRADE IN 1895.

The official statistics of German trade in 1895 have just been made public. While we have for some time been in possession of particulars and figures relating to our own import and export trade with the German Empire, until now trade statistics of other countries with the latter have not been available.

EXPORTS.

In making a comparison of Germany's export trade in 1895 with 1894, it must be borne in mind that the latter year was an unfavorable one and the exports fell below those of some former years. In spite of this circumstance, a study of the trade returns reveals the fact that not only has Germany's export trade regained the ground lost in 1894, but has, in most branches, made rapid strides, proving that the aggressive competition for foreign trade, especially in creating and strengthening new markets, has already borne fruit. The exports of 1893 were valued at 3,244,600,000 marks ($772,214,800); those of 1894, at 3,051,500,000 marks ($726,257,000); and of 1895, at 3,424,300,000 marks ($814,983,400).

With the one exception of sugar, a marked increase is shown in the leading articles of export. The extent of this increase is made apparent by the following comparison of the exports of 1895 and 1894:

Description.	1895.	1894.
Cotton goods	$47,742,800	$37,485,000
Silk goods	35,985,600	29,250,200
Woolen goods	63,998,200	54,621,000
Dress goods and linen	24,061,800	22,705,200
Iron, manufactures of	71,828,400	61,023,200
Other metal goods	27,251,000	23,847,600
Machines and instruments	38,718,200	31,773,000
Coal and coke	34,700,400	33,248,600
Chemicals	71,162,000	64,474,200
Leather goods	39,460,400	31,416,000
Paper and manufactures of	24,847,200	21,872,200
Books and works of art	25,513,600	23,895,200

The largest percentage of increase is shown in cotton goods, 27 per cent more having been exported in 1895 than during the preceding year; then follow leather goods, with an increase of 26 per cent; silk goods, 23 per cent; machinery, 19 per cent; iron, 18 per cent; and woolen goods, 17 per cent.

The silk and woolen exports did not reach the figures of some former years; this is attributed to unfavorable customs tariffs of several foreign

countries. In almost every other article of export, higher figures are shown than in any previous year.

It is beyond doubt that, in 1895, the Germans succeeded in opening up new markets for their produce and manufactures, and it is also certain that great exertions are being made not only in this direction, but to maintain and increase the volume of their established trade.

In some parts of the world, where English goods formerly reigned supreme and where England controlled the import market almost absolutely, the Germans have proved themselves successful competitors, and their trade rivalry has assumed proportions sufficiently large to create uneasiness in English trade circles. This is confirmed by various English consuls.

Germany entertains great hopes, just now, of establishing closer trade relations with China. The presence of Li Hung Chang in Germany and the obvious tendency on the part of the Chinese Government to enter into closer touch with western civilization and trade relations is an important topic of newspaper speculation at present. This great eastern statesman has been the recipient of lavish attention in Germany. The industries and resources of the Empire have been so thoroughly exhibited to him as to no doubt have left a forcible impression on his mind. He is just now engaged in a tour of inspection of the manufacturing centers of northern Germany. Nothing has been left undone to convince him of Germany's greatness and advantages as a commercial ally. The time the viceroy has devoted to inspecting German manufactories and methods would seem to confirm the German impression that his mission is less one of official etiquette than looking to the establishment of commercial relations and the introduction of western enterprise into the Empire of China.

The Chinese Government has just completed arrangements whereby one hundred German officers have been engaged as instructors for the Chinese army, with a view to effecting its reorganization.

Germany's trade with China shows a steady development. Her principal exports thither in 1894 and 1895 were:

Articles.	1895.		1894.	
	Quantity.	Value.	Quantity.	Value.
	Tons.		*Tons.*	
Aniline dyes	1,457	$1,380,000	1,449	$1,475,000
Bar iron	5,520	119,000	5,725	119,000
Iron, manufactures of	319	143,000	319	119,000
Cast iron	1,014	166,000	957	143,000
Cannons	258	238,000	299	286,000
Sewing needles	377	806,000	471	904,000
Woolen yarn	160	214,000	.....	.....
Guns	270	830,000	47	143,000
Copper:				
Pig	484	119,000	.....	.....
Ware	1,472	975,000	934	595,000
Gunpowder	374	119,000	417	143,000
Manufactures of wool	249	830,000	153	500,000
Unprinted woolen cloth	333	500,000	236	333,000

The total imports at all the Chinese treaty ports in 1895 were valued at 175,000,000 taels (the Haikwan customs tael fluctuated in 1895 from 74.9 to 80.8 cents).

With Japan, also, an increased export trade is noticeable, the principal German exports to Japan in 1894 and 1895 being:

Articles.	1895.		1894.	
	Quantity.	Value.	Quantity.	Value.
	Tons.		*Tons.*	
Alkaloids and kindred salts	15	$309,000	6	$119,000
Aniline dyes	269	450,000	298	309,000
Bar iron	15,959	333,000	15,632	333,000
Iron nails	13,433	450,000	12,459	428,000
Iron wire	4,826	143,000	.....	.....
Woolen yarn	426	547,000	321	405,000
Paper (gold, silver, and colored)	142	143,000	194	190,000
Unprinted woolen cloth	763	1,142,000	292	428,000
Sugar	8,120	476,000	.....	.....

The balance of trade of the United States with Germany is still in our favor. The imports from the United States in 1894 were $126,830,200 and the exports to the United States $64,521,800.

For the ten months ended April, 1896, the following exports from Germany to the United States show an increase over the corresponding period of 1895.

Articles.	10 months ended April, 1895.		10 months ended April, 1896.	
	Quantity.	Value.	Quantity.	Value.
Cheese.....pounds...	178,960	$24,041	389,741	$50,129
Cotton cloth.....square yards...	1,903,730	276,430	2,269,901	346,181
Earthen, stone, and china ware	.....	1,573,541	.....	2,209,857
Fur skins	.....	518,669	.....	735,698
Hides and skins.....pounds...	5,276,396	697,946	7,500,809	1,129,060
Jewelry and precious stones	.....	271,419	.....	358,286
Lead, manufactures of.....pounds...	896,208	17,569	1,113,148	25,151
Leather gloves	.....	2,320,248	.....	2,643,253
Paper, manufactures of	.....	1,444,205	.....	1,798,382
Silk, manufactures of	.....	5,372,899	.....	5,482,280
Spirits.....proof gallons...	55,539	55,984	82,269	63,518
Toys	.....	1,426,894	.....	1,834,994
Wines	.....	909,027	.....	1,080,176
Wood pulp.....tons...	4,909	229,997	5,358	267,522
Woolen carpets.....pounds...	1,053,451	106,438	1,114,389	118,728
Woolen cloth.....do.....	1,579,576	1,469,929	2,703,513	2,312,458
Woolen dress goods	.....	4,248,466	.....	5,648,925

For the same periods, a falling off is shown in the following articles of export to the United States:

Articles.	10 months ended April, 1895.		10 months ended April, 1896.	
	Quantity.	Value.	Quantity.	Value.
Coffee.....pounds...	5,216,352	$919,959	1,618,845	$235,531
Cotton, manufactures of.....	.....	8,387,484	.....	7,141,863
Furs, manufactures of.....	.....	1,106,461	.....	911,974
Glass and glassware.....pounds...	246,769	23,235	268,493	20,305
India rubber.....do.....	1,112,441	451,319	796,734	306,661
Paper stock, rags, etc.....	.....	501,798	.....	489,900
Sugar, under No. 16, Dutch standard.....pounds...	288,114,290	5,871,720	263,067,501	5,847,516
Tobacco, leaf.....do.....	380,529	270,193	122,616	113,003

It will be noticed that the falling off is not in every case in quantities as well as in values. This was owing to the prevailing low prices during the year.

There was no export of gold or silver, coin or bar, to the United States from Germany during either 1894 or 1895 mentioned in the official statistics.

IMPORTS.

The value of Germany's imports in 1895 was 4,246,100,000 marks ($1,010,571,800), falling below those of 1894, which amounted to 4,285,500,000 marks ($1,019,949,000).

The following twenty articles comprise the more important imports:

Principal imports in 1895.

Articles.	Value.	Percentage of total imports.	From the United States.
		Per cent.	
Wool.....	$59,024,000	5.8	.....
Cotton.....	52,527,000	5.2	$40,412,000
Coffee.....	48,195,000	4.8	.....
Wheat.....	34,272,000	3.4	5,307,000
Woolen yarn.....	28,417,000	2.8	.....
Silk, raw.....	33,586,000	2.3	.....
Barley.....	21,372,000	2.1	.....
Tobacco, raw.....	21,039,000	2.1	1,999,000
Hides.....	19,635,000	1.9	1,571,000
Rye.....	19,040,000	1.8	71,000
Horses.....	17,808,000	1.8	500,000
Eggs.....	17,713,000	1.7	.....
Chile saltpeter.....	16,952,000	1.7	.....
Coal.....	15,065,000	1.5	.....
Petroleum.....	14,661,000	1.5	13,542,000
Cotton yarn.....	13,494,000	1.3	.....
Lumber:			
Raw.....	13,494,000	1.3	143,000
Sawn.....	10,282,000	1	1,047,000
Lard.....	12,542,000	1.2	11,662,000
Copper, raw.....	9,568,000	1	6,854,000

The values of wheat, barley, rye, and oats combined form less than 8 per cent of the total imports, while raw materials for textile industries amount to more than double this figure. The percentage of grain imported in 1895 was greater than that of either of the two preceding years; in 1894, it was 7.4 per cent, and in 1893, in which year Germany produced very abundant crops, it was only 5.7 per cent of the total imports.

Russia still continues to supply Germany with the greater proportion of grain. In 1895, the quantities and values of grain imported into Germany were:

Imported from—	1895.		1894.	
	Quantity.	Value.	Quantity.	Value.
Wheat.	*Tons.*		*Tons.*	
Russia	678,203	$17,136,000	280,594	$6,474,000
Argentine Republic	263,229	6,902,000	346,245	8,234,000
United States	193,594	5,307,000	323,498	8,163,000
Roumania	127,154	3,356,000	142,953	3,570,000
Austria-Hungary	26,801	833,000	19,409	571,000
Belgium	13,977	357,000	13,346	333,000
Bulgaria	6,717	167,000	.....	.....
Servia	5,627	143,000	.....	.....
Australia	5,383	167,000	.....	.....
Holland	4,944	119,000	8,208	214,000
British East India	.....	.....	9,470	238,000
Barley.				
Russia	619,450	11,353,000	530,392	9,092
Austria-Hungary	237,711	8,473,000	344,849	11,805
Roumania	46,336	928,000	193,117	3,213
Denmark	10,652	286,000	7,147	2,141
Holland	6,218	119,000	9,811	2,380
Rye.				
Russia	841,974	16,422,000	533,449	10,543,000
Roumania	93,843	1,999,000	88,442	1,785,000
Bulgaria	6,808	143,000	10,777	214,000
United States	3,060	71,000	5,571	119,000
Oats.				
Russia	225,434	4,570,000	292,190	6,188,000
Holland	4,612	119,000	12,730	333,000
Austria-Hungary	3,156	95,000	12,447	405,000
Roumania	2,253	48,000	47,662	1,309,000
United States	1,571	48,000	8,539	214,000
Turkey	.....	.....	13,562	333,000
Sweden	.....	.....	4,677	119,000
Corn.				
United States	181,846	3,650,000	267,111	5,712,000
Argentine Republic	47,694	976,000	6,954	143,000
Roumania	44,136	1,047,000	149,233	3,189,000
Russia	33,592	714,000	109,100	1,999,000
Austria-Hungary	5,076	143,000	10,227	238,000
Turkey	1,718	48,000	18,440	381,000
Bulgaria	925	24,000	9,452	214,000

Buckwheat to the value of $571,000 was imported in 1895, Russia supplying a little over half. The source of the remainder is not given.

Almost all articles of import into Germany from the United States show an increase; in some cases, this is very notable.

The following articles imported from the United States show an increase in 1895 over 1894.

Articles.	1895.		1894.	
	Quantity.	Value.	Quantity.	Value.
	Tons.		*Tons.*	
Barrel staves	12,490	$309,000	5,982	$143,000
Butter	375	119,000	.....	.....
Cotton waste	4,725	328,000	2,891	428,000
Fruits, dried	5,262	785,000	2,134	428,000
Horses	(*)	500,000	.....	.....
Natural phosphates	210,346	2,499,000	185,805	2,213,000
Meats	16,835	2,999,000	14,226	2,713,000
Meat extracts	152	259,000	.....	.....
Machinery, cast iron	2,405	1,285,000	1,845	309,000
Petroleum	749,258	13,542,000	757,414	10,448,000
Oil:				
Cotton seed	16,671	1,380,000	15,387	1,785,000
Cake	94,517	2,142,000	88,919	2,166,000
Turpentine, resin, and balsam	71,083	1,261,000	62,778	1,118,000
Other than resin	14,027	1,404,000	10,638	1,118,000
Lubricating	31,122	1,285,000	28,310	1,142,000
Fur and bird skins	135	143,000	133	143,000
Manufactures of wood	1,537	190,000	1,294	143,000
Tobacco, raw	9,076	1,999,000	8,782	1,188,000
Whalebone	51	333,000	24	143,000
Wood extract	1,627	333,000	1,559	309,000

*2,479 head.

During the year 200 tons of caviar, valued at $214,000, were imported, an increase of 16 tons over 1894. The imports of caviar from Russia fell from 201 tons in 1894 to 190 tons in 1895. There is no doubt but this was due to the fact that American caviar has a ready market here and is rapidly replacing the cheaper Ural and Astrachan grades.

The following articles of import from the United States show a decrease in 1895 compared with 1894:

Articles.	1895.		1894.	
	Quantity.	Value.	Quantity.	Value.
	Tons.		*Tons.*	
Boxwood	4,611	$262,000	5,758	$333,000
Lard	72,719	11,662,000	72,019	13,709,000
Lead	6,024	286,000	7,486	357,000
Oxen	.....	.....	5,228	571,000
Seeds:				
Grass	1,101	143,000	1,145	143,000
Clover	2,824	571,000	5,038	1,142,000
Skins, sausage	5,933	2,428,000	5,498	2,547,000

Gold coin to the value of $5,760,000 was imported from the United States in 1895, against $19,468,000 in 1894, and $1,023,000 of gold bars in 1895. No bars were imported in 1894.

Raw and bar silver to the value of $95,000 were imported from the United States in 1895, against $286,000 in 1894.

THOS. EWING MOORE,
Commercial Agent.

WEIMAR, *June 27, 1896.*

THE UNITED STATES MANUFACTURER AND THE GERMAN MARKET.

If the United States manufacturer or merchant would make the same effort to introduce his goods into Germany that the German does to put his goods upon the United States market, there would be far more American products sold in this country than there are to-day. The American seems to think that the merit which his goods possess ought to be sufficient to guaranty for them a market and that it is, therefore, quite unnecessary for him to stir himself at all to find the same.

During the three years which I have had the honor to represent the United States at this post, I have not had a single representative of any American industry to darken the door of my office asking for information that would aid him in his efforts to introduce his goods or in any way to get a foothold here.

I am, however, in almost daily receipt of letters, circulars, or something of the kind from American manufacturers or dealers requesting lists of names and other assistance to enable them to get their goods into this market, and to these I always reply promptly, furnishing all the information at my command, but there the matter seems to end, as I never hear of anything else being done and never see any of these manufacturers here exhibiting their goods or making any personal efforts to introduce the same.

To suppose that consular officers can enter into an active canvass for the introduction and sale of American products, is a very great mistake. They can introduce the manufacturer or his representative, and are willing to do so, but they can hardly act as agents for the introduction of his goods.

Catalogues, circulars, and all the other advertising matter sent here are a clear waste of money. The Germans will not buy without first seeing the goods themselves.

In this district, the leading manufacturing interest is that of looking-glass plates, and over $1,000,000 worth of this article is annually exported to the United States; but the sales are effected, not through the instrumentality of letters, circulars, etc., but by the personal efforts of the manufacturers themselves, who go often to the United States and ride the country over, from New York to San Francisco and from St. Paul to New Orleans. Without this personal and persistent effort on the part of the manufacturers here, a considerably less quantity of Bavarian glass would find its way into the American market.

Now, it is said that the rule is a poor one that will not work both ways, and if it be necessary for the German, in order to sell his goods in America, to travel that country over and give the matter his personal attention, why is it not equally necessary for the American manufacturer, who seeks a market for his goods in Germany, to come here in person, or, at least, send a capable and reliable representative, and endeavor by individual efforts to get same before the people?

There ought to be a market here for many American products, and, without doubt, there would be if only the right and proper steps were taken to find it.

The Germans unquestioningly admit the superiority of American manufactures and workmanship, and they pattern after the same whenever possible. We have here, American dentists' tools, American stoves (that is, stoves made after the American styles), American fashion plates in all the tailor shops, and many of the toys are made after American samples. The word "American" attached to anything is intended to convey the idea of superiority. And yet, exceedingly few American goods are sold here, simply for the reason that no effective effort is made to introduce them.

It is interesting to note the difference in price and quality between American and German made furniture. For example, I am writing this article on a desk that cost almost double what a good rolling top, solid oak desk would cost in America, and yet, every particle of it, except the thin veneer of walnut, is made of pine, something like the sap pine that grows in some parts of the United States and is considered good for nothing.

A dining-room set cost me over $150, and before it had been in use six weeks, it cracked and split so badly that it was necessary to return it to the shop for repairs. It was, of course, made of the poor quality of pine referred to and very thinly veneered with oak, and the oak here is so coarse in grain that it has no beauty. Sixty dollars in the United States would have bought a much finer and more durable set.

Three pieces of parlor furniture—two chairs and a sofa—upholstered upon pine frames, cost 450 marks (over $100), and, according to furniture advertisements which appear in the New York and Philadelphia papers, $40 would buy a much better and more stylish set in either of those cities. And these high prices run through all grades of furniture, even down to the plainest kind for kitchen use; indeed, every piece of furniture manufactured here is from two to three times as high in price as that made in the United States. This being true, why is it, then, that with the right efforts on the part of our manufacturers and dealers, a good quantity of the well-made, solid oak and walnut furniture of the United States, which sells so cheaply there, can not be put upon the market of this country? I leave the manufacturers to answer.

Then, there are the American farming implements and machinery. It is only necessary to visit the Bavarian Industrial Exhibition, now being held in the city of Nuremberg, to see how wretchedly far behind this country is in the manufacture of such articles. The Bavarian still reaps his grain with

the old-time sickle, uses the heavy, unhandy grubbing hoe to hill up his potatoes, and turns up the soil with an implement so heavy and clumsy that it requires wheels to get it over the ground. Surely, the well-made, light, convenient, and cheap farming implements of the United States would find a ready sale here, if only the people could see them and learn the advantages to be derived from their use.

The manner of driving piling here would, indeed, make an American contractor smile. The method is as follows: A simple block-and-fall arrangement is rigged up over the pile and to the end of the rope running through the pulley and fastened to the weight are attached about twenty-five smaller ropes with hand pieces and twenty-five men grab these and, at a signal from one of their number, all pull together. The weight goes up about 18 inches or 2 feet, when the men relax their hold and the weight drops. It is unnecessary to state how long it takes by such a method to drive a pile or how much more effectually a small dummy engine would do the work.

In the erection of buildings, the same tedious process is employed. Every stone to be raised requires the strength of a pair of horses and about fifteen men tugging away at the rope. The machinery manufactured and used in the United States for such purposes would do away with this clumsy method, but none of it seems to be in the market here.

Then, there are the American-made boots and shoes—the finest in the world. I am sure a good number of the 50,000,000 people in Germany would buy them if they had an opportunity. The German boots and shoes are much inferior to the American make. They lack that style and quality which characterize the American goods and are considerably higher in price.

The great difficulty with the manufacturers and dealers of the United States is that they waste their time shouting for a larger home market, when there is no larger home market and can never be so long as the supply so greatly exceeds the demand. The larger markets they want are here and elsewhere in the world and are not so hard to find if they would only take the time to hunt them up.

Let us suppose, for instance, that the glass manufacturers of this district, to whom I have already referred, should stay at home and make themselves hoarse shouting for a home market, what would be the result? Simply this, three-fourths of them would be compelled to go out of business in less than six months, and yet, there are 50,000,000 consumers right here in the German Empire, more than two-thirds as many as in the whole United States.

No, the German manufacturer shouts for nothing, but hustles for business. The home market does not worry him; he lets that regulate itself. The markets of the world are what he is after, and in these, he sells his goods, and sells them, too, at a profit.

The American manufacturer may well pattern after the example of his persistently industrious German brother.

HENRY C. CARPENTER,
Commercial Agent.

FÜRTH, *July 20, 1896.*

HOW TO EXTEND UNITED STATES TRADE WITH GERMANY.

Nearly every mail arriving from the United States brings letters and advertisements to this consulate from business people seeking to introduce American manufactures and products into this market. I have repeatedly, in my reports to the Department of State, called attention to what I consider to be the best methods of extending American trade abroad, and that is the sending out of proper representatives who are thoroughly acquainted with the class of goods they wish to introduce and who should further have a knowledge of the language of the country they may visit. This is the way that Germany has to a great extent built up and extended her foreign trade. I am sure that if the United States merchants would try this plan, they would soon be convinced of the great advantages it has over the present one of scattering advertising circulars broadcast through Europe.

What the merchants here wish to see are the goods and some one who can satisfactorily explain to them their character and quality.

I will give here an illustration of what happened in this respect in recent years with a firm who wished to introduce into Germany a very useful and practical patented machine. After having tried in vain to do so by sending out advertisements, an agent was sent over who thoroughly understood the construction and working of this machine. This agent has now been in Germany for about two years, and he informed me the other day that he had done a business during the past year of about $200,000 with this one machine alone.

I think if the various trade journals in the United States which are taking a great interest in ascertaining through the consuls the new enterprises, etc., requiring American manufactures, would work with a view to interest American manufacturers and exporters in this method of doing business abroad, they would achieve vastly better results than by their present mode of procedure.

This should be observed especially in the case of patented articles, where, in many instances, there is no person directly interested and on the spot to prevent any infringement of the patent. I have heard of excellent American inventions not infrequently being copied or slightly altered and put on the market and sold at a much cheaper price under their original names, thereby injuring American trade.

Perhaps it would not be an unwise plan for leading American firms to unite in sending abroad competent persons to study the requirements and tastes of foreign peoples and to report the information for the benefit of the firms concerned. This is especially recommended where technical knowledge is required to explain the working and construction of machinery.

The complaint has also been made that American merchants confine their trade too much to agents at seaport places in Europe, instead of put-

ting themselves more in direct connection with the merchants in the interior.

I would further suggest the practicability of establishing a central bureau in the United States supported by the contributions of exporting merchants. This bureau could send out capable men to study and ascertain the requirements of foreign countries and the best means of supplying them, and report such information for the benefit of the bureau's subscribers.

WM. D. WAMER,

COLOGNE, *June 10, 1896.* *Consul.*

CONSUMPTION OF WHEAT AND RYE IN GERMANY.

Statistics recently published of the consumption of wheat and rye and the products thereof in Germany can not fail to be of interest to the American farmer on account of the marked tendency of the Germans to eat wheat bread in place of rye bread. For the period from 1879 to 1895, the consumption of rye bread has steadily decreased and wheat bread shows a more than proportional advance. As the United States exports large quantities of wheat and wheat flour to Germany and scarcely any rye, the importance of the following figures is apparent.

During the years above mentioned, the consumption of rye and wheat per capita in Germany was as follows:

Year.	Rye.	Wheat.
	Pounds.	*Pounds.*
1879–1884	266½	113½
1884–1889	255½	124½
1889–1894	248½	139½

Therefore, while the consumption of rye between 1879 and 1894 decreased 18½ pounds per capita, that of wheat increased 26 pounds per capita. Again, while from 1879 to 1884 the proportion of wheat consumed was 30 per cent and rye 70 per cent, these percentages were changed in 1889–1894 to 36 per cent for wheat and 64 per cent for rye.

It appears from this that Germany, hitherto a practically rye-eating country, is gradually going over to wheat bread. The influence of the neighboring wheat-consuming countries and the more luxurious style of life in the cities must largely account for the change.

The year 1895 was remarkable for an extraordinarily large consumption of both breadstuffs, *i. e.*, wheat, 278⅝ pounds per capita; rye, 151½ pounds per capita. This is attributed not only to the abundant crop of the year, but also to that of 1893, which was exceptionally large. The continual low prices for rye and wheat in 1895 and 1896 bear out this supposition.

The prices of grain per 1,000 kilograms (2,204.9 pounds) in Germany (Berlin) since 1890 are given below:

Year.	Rye.	Wheat.	Oats.	Barley.
1890	$40.46	$46.50	$37.66	$46.49
1891	50.26	53.35	39.41	43.00
1892	41.96	41.98	35.55	40.38
1893	31.80	36.16	37.46	41.32
1894	28.03	32.39	31.21	38.94
1895	28.50	33.91	28.83	34.79

The prices of wheat and rye flour per 100 kilograms (220.46 pounds), with sack, for the same years were:

Year.	Rye flour (Berlin).	Wheat flour (Breslau).
1890	$5.57	$6.62
1891	6.93	7.83
1892	5.71	6.61
1893	4.22	5.19
1894	3.69	4.72
1895	3.93	5.17

The flour imports into Germany have steadily increased since 1890. Exports of the same article also show an increase, with the exception that those of the year 1895 fell below those of 1894.

Flour imports and exports from 1890 to 1895 were:

Year.	Imports.		Exports.	
	Quantity.	Value.	Quantity.	Value.
	Tons.		*Tons.*	
1890	14,342	$880,600	116,204	$5,170,000
1891	13,975	952,000	104,187	4,331,600
1892	26,620	1,499,400	105,191	3,998,400
1893	26,895	1,475,600	146,615	5,236,000
1894	30,854	1,332,800	188,374	4,831,400
1895	32,537	1,475,600	166,731	4,355,400

Of the flour imported into Germany in 1895, the United States furnished but a small proportion compared with Austria-Hungary. From the latter country came 22,248 tons, the United States sent 3,910 tons, and other countries 6,379 tons.

Germany's grain exports are insignificant. In 1895, 69,911 tons of wheat and 35,992 tons of rye were exported, mostly to Sweden and Denmark.

The cultivation of grains in Germany is an important agricultural pursuit. The acreage devoted to grain growing in 1894 was 13,569,848 hectares (33,531,094 acres), as follows:

	Acres.
Rye	14,936,127
Oats	9,678,230
Wheat	4,893,806
Barley	4,022,931
Total	33,531,094

The acreage planted in these grains produced:

	Tons.*
Rye	7,075,020
Oats	5,250,152
Wheat	3,012,271
Barley	2,432,913
Total	17,770,356

The United States takes third place among the countries exporting wheat to Germany. Germany's imports of wheat in 1895 were principally from Russia; this is due, in a great degree, to the German-Russian commercial treaty, which is very favorable to the admission of Russian agricultural produce into Germany.

The imports of wheat by countries in 1895 were:

Country.	Quantity.	Country.	Quantity.
	Tons.		*Tons.*
Russia	678,203	Belgium	13,977
Argentine Republic	263,229	Bulgaria	6,717
United States	193,594	Servia	5,627
Roumania	127,154	Australia	5,383
Austria-Hungary	26,801	Holland	4,944

American flour is more expensive than any other kind in the German market, which alone must account for the small quantity imported. American flour retails for 8½ cents per kilogram (2.2046 pounds) and other flour from 6 to 7 cents. Wheat bread costs 18 to 20 pfennigs (4¼ to 4⅔ cents) for a loaf weighing 1 pound and rye bread 9 pfennigs (2.14 cents) per loaf.

Attention should be drawn to the fact that white bread is replacing rye to a large extent in Germany, and advantage should be taken by the American farmer and exporter of the growing demand for wheat and wheat flour.

THOS. EWING MOORE,
Commercial Agent.

WEIMAR, *July 15, 1896.*

It is a remarkable fact which will interest exporters and dealers in the United States that, according to the publications of the Statistical Annuals of the German Empire, the consumption of rye in Germany is steadily decreas-

* Tons of 2,204.6 pounds.

ing, while that of wheat is continually increasing. The consumption, per year and per head, was:

Year.	Rye.		Wheat.	
	Kilograms.	*Pounds.*	*Kilograms.*	*Pounds.*
1879-1884	121	266.75	51.6	113.75
1884-1889	115.9	255.51	55.6	122.57
1889-1894	112.6	248.23	63.4	139.77

The decrease in rye during the last period, compared with the first one, amounts to 8.4 kilograms (18.52 pounds) per head and the increase in wheat to 11.8 kilograms (26.02 pounds) per head.

In the years 1879–1884, 70 per cent of the whole consumption was of rye and only 30 per cent wheat; in the years 1889–1894, only 64 per cent comprised rye and 36 per cent wheat.

It is evident that, if this change continues, the importation of wheat in Germany will considerably augment, while that of rye will rather diminish.

I add a table showing crop prospects for grain and other products on August 15, 1896, from official reports:

Description.	Prussia.	Bavaria.	Baden.
Wheat:			
Winter	2.4	2.16	.....
Summer	2.8	2.15	.....
Winter spelt	2.7	.....	.....
Rye:			
Winter	2.6	2.22	.....
Summer	3.2	2.57	.....
Summer barley	3	2.5	.....
Oats	3	2.28	2.2
Pease	3.3	.....	.....
Potatoes	2.8	2.24	2.3
Clover	3.3	1.97	2.9
Meadows	3.1	1.89	2.3
Hops	.....	2.25	2.6
Vines	.....	.....	2.3
Tobacco	.....	.....	2.5

NOTE.—1 means "very good;" 2, "good;" 3, "middling;" 4, "bad."

J. H. THIERIOT,
Commercial Agent.

FREIBURG, *August 27, 1896.*

PROFIT SHARING IN SAXONY.

Among the many efforts being made here in behalf of the working people none appeal so powerfully to common sense and good judgment as those being tried in the paper factory of Sieler & Vogel, in Grimma, Saxony. The concern employs 285 hands, of whom 70 are women. Although a great many employees own their own houses, the firm has built and let tenements

for from $15 to $20 a year. The interest on capital invested in these tenements, however, runs up annually from $45 to $55. A corporation store sells all kinds of goods, except liquors, at a small advance on cost prices. Liquors are excepted because of a desire on the part of the manufacturers to discourage their use. The net earnings of the corporation store, amounting annually to 10 per cent, are divided among the patrons. A savings bank, run by the concern, gives its depositors 5 per cent on investments; the usual bank rates here are from 1½ to 3 per cent. There is an eating house run by the concern also, in which the help can get a good "square" meal (kräftiges Mittagessen) for 5 cents. Hot spring water is always ready for coffee. After working ten years, each male hand receives, besides a badge of honor, an age premium of from $15 to $16 and each female $10; after twenty-five years' work for the firm, the former get $75 and the latter $50.

About 1870, the proprietor of the factory began to divide certain surplus earnings with all his labor, except those paid by what they make. The division was made in the following manner: When the earnings went above a certain sum for each machine, a part of such surplus, bearing a ratio to the employee's earnings, was paid him or her. These sums are sometimes very considerable, reaching as high as $75 or $100. Out of a pension fund, laborers disabled by accident or sickness are paid $25 to $40 in addition to the amount required to be paid them by law. The pension fund referred to was established by gifts and has to-day $16,000 to $20,000 in cash. To have aid and succor in cases of sickness, each employee pays weekly 2½ cents for free medicine and treatment by a physician. Persons called to serve as reserves in the army or for practice in the landwehr get their full pay during this time. Near by Grimma, in a place called Boehlen, the firm bought land and built villas in which the officers of the company and the stores spend the summer months, or at least their vacation weeks. The thing is an established fact and a success. The experimental period has long been passed. It is a successful answer to the heartless joint-stock company. It shows how even these might make the lot of the laborer less hard and the burdens he must bear a great deal lighter.

J. C. MONAGHAN,

CHEMNITZ, *May 6, 1896.* *Consul.*

GERMAN BOARDS OF ARBITRATION FOR MERCHANTS.

A matter of much more than ordinary interest is just now before the German business world. An effort is being made to establish boards of arbitration for merchants somewhat similar to those already operating successfully in settling the disputes between workmen and their employers or between workmen and workmen. The various chambers of commerce, boards of trade, etc., have gone into the subject so far that good is sure to come

out of it. The idea originated with the Prussian Minister of Commerce, Baron von Berlepsch. He sent a circular letter to chambers of commerce urging the adoption of arbitration. The fact that such boards have been very successful among manufacturers and their working people, keeping the latter almost entirely from the courts (disputes almost invariably being settled by arbitrators), commends them for commercial and trade disputes. Besides an enormous saving in time and money, they yield a much higher percentage of exact justice, for they are always made up of men familiar with and skilled in the kind of questions that come up for settlement. The matter has made headway so far that six Brunswick chambers of commerce have established such a board, to which commercial and trade disputes are to be referred. They have, as yet, no power to pronounce and execute sentence. Their powers are limited to effecting, if possible, amicable settlements. This failing, parties may still seek justice in the ordinary channels of law. It is agreed, however, that in cases where both parties ask for and agree to submit to any arbitration board's decision, such will be given.

The greatest advantage, of course, to be derived from such boards is the huge saving of time and money. In the crowded condition of the courts, in the enormous expenses attached to every step of a civil-court process, time and money so waste that houses have had to take years to recover from losses and confusion consequent upon the slowness and intricacies of courts of justice. Calendars are everywhere crowded, cases can be appealed and appealed until even those having justice on their side must choose injustice and bankruptcy. To follow the slow and uncertain system that leads to a civil-court decision is often to run along the road to ruin. The mercantile world is getting tired of these losses. It is tired, too, of the uncertainty, in mercantile cases, of civil-court decisions. Arbitration by experts, by men capable to sift and weigh evidence, by men much more familiar with all phases of commercial problems than any civil judge ever could be, is sure to commend itself to any community where the ends aimed at are exact justice and as little interference as possible with the wheels of trade. Even so limited a system as that adopted by the Brunswick boards, which goes only the length of considering the pros and cons and then urging amicable settlement, leaving to the courts the power to punish or compel settlement, has much in its favor. Earnest efforts are to be made to carry this movement along. Intelligence is urging its adoption everywhere in the Empire. The public press commends it, the merchants, manufacturers, and even the lawyers speak of it as a system suggested by common sense—as the only one likely to successfully aid in the rapid settlement of cases that know no need of lawyers and civil courts, cases that come up in the course of commerce or trade and that result from misunderstanding oftener than from any desire or purpose to deal unfairly or to do injustice.

J. C. MONAGHAN,
Consul.

CHEMNITZ, *April 30, 1896.*

REFORM OF GERMANY'S CONSULAR SERVICE.

At a time when earnest efforts are being made to improve the consular service of the United States, it may be interesting to know that Germany is to improve hers. The following is a free translation of an article in the official organ of this city:

The reform of the imperial consular service was discussed recently in certain papers. It is interesting to note that the Rhineland and Westphalian Union for the protection of the Empire's industrial interests has handed in to the government president at Dusseldorf, at whose request the work was undertaken, an exhaustive essay dealing with consular reform. The essay mentions as most important the fact that the commercial reports of German consuls appear so late in the consular reports as to be of little value because of the fact that other important recent events overtake and overshadow them. The result is, that any value they might have had for commerce vanishes. The report claims, further, that the official reports are ofttimes unreliable, and cites, as an instance, reports upon Germany's exports of chemicals. The essay urges, also, that with rare, well-known exceptions, the business methods of German consulates are excessively bureaucratic. This shows itself especially in those places where it is necessary for the imperial consuls to furnish information in special cases or to help in guarding the interests of German merchants.

The French, Belgian, Italian, and Swiss consuls, but in an entirely special measure (im ganz besonderem Masse), the consuls of the United States, have more feeling (are much more in touch) with the industrial and commercial interests of the countries to which they are accredited. The essay expresses a wish that evils be remedied by giving the imperial consuls sent to foreign parts a better preparatory training. They are sufficiently well trained in legal lines, says the report, but lack almost entirely the practical experience that would enable them to recognize in time what ways and means would best aid home industries. They lack also the ability to see the practical importance of openings in business, industrial changes, or the introduction of new methods in machinery, transportation, etc.; in short, to see the advantage of every important change in commerce and industry to the home trade. Therefore, it is absolutely necessary that the consuls and their assistants pass through a practical school covering commerce and traffic before they are appointed to such important work.

J. C. MONAGHAN,

CHEMNITZ, *July 11, 1896.* *Consul.*

COMMERCIAL ATTACHÉS AT CONSULATES.

The German press attaches unusual importance to the appointment by the English Government of commercial attachés at Berlin and Madrid, the former for Germany, Netherlands, and Scandinavia and the latter for Spain and Portugal. The appointment of these attachés is attributed to Germany's activity in extending her foreign trade in the colonies and those markets heretofore dominated by English goods, and even becoming a competitor in the English market itself. To meet this competition, England is bestirring herself, and an outcome of the deliberations of the English Government has been the appointment of commercial attachés at the capitals mentioned, and in addition to this, the duties of the like attachés at Paris and St. Petersburg are to be defined anew.

This action the Germans regard as the direct result of and recognition by England of Germany's dangerous trade rivalry, and they believe that it is against Germany that this step is directed. German consular reform is considered to be necessary to meet England's action, and the press is emphatic in its declarations that the growing commercial relations of Germany with foreign countries necessitate an entirely different education and preparation for a modern consular career. It claims that the exigencies of the service require that consular officers should be men commercially and technically trained, or that assistants so trained should be given the "furisten" (holders of a university law degree), who alone are now eligible for the more important consular commissions. That this is a matter of absolute necessity can not be questioned when one considers the duties of a consular officer to-day, his intimate connection with commercial affairs, knowledge of markets, and the merits of competing goods.

"The appointment by the English Government of commercial attachés warns us," say the German papers, "to be on our guard and to adopt measures to combat this effect. It must be remembered that to conquer new markets is not easy, but to retain them is often more difficult. So much more is this necessary when each year the forces of the competing countries become more perfectly organized. A specialist is of great service where his colleagues, not having devoted themselves to the study or requirements of special branches, prove inefficient."

Men specially trained in foreign commerce are needed in order to grasp intelligently and in time such details as are necessary to extend the export of their country and enlarge its industrial activity.

The German papers continue:

The appointment of the English commercial attachés reminds us of the concession of the German Government to agriculturists in appointing agricultural attachés at the embassies and legations of the most important commercial countries, a measure that met with universal approval. We will not ask whether the activity of these special representatives of agriculture

has fulfilled expectations; the assertion is probably well founded that these attachés are mostly Landwirthe (practical farmers), and could not, therefore, be of benefit to general foreign commerce.

There are two ways to promote commerce. One is to appoint commercial attachés in addition to agricultural attachés, or commercial attachés alone, whose duties would include attention to agricultural interests; the second one would be the reform of the consular duties. It seems to be imperative that the two-sided functions of consuls (judicial and commercial) should no longer be united in one individual. Either the consuls having judicial status should be assisted by attachés having had instruction in commercial and economic branches, or, separate from the present consular organization, commercial consuls should be nominated for certain important districts. If the Government will not go so far, the appointment of commerçial attachés in nearly all countries with which Germany has trade connections will be of benefit. The commercial and economical reports from abroad can not be too detailed. Reference can here be made to the American and English consular reports to which the German merchant attaches so much importance.

How important the German trade with the South American republics is, how great the competition, and how difficult the markets once won are to be held, is generally known, but we shall not see to what magnitude our exports to South America may attain, what increase our exports to the hitherto neglected Orient may assume, until we have special agents for German commercial interests, be they called commercial attachés or merely special assistants to be attached to the existing consulates. There is absolutely no doubt but that Germany must endeavor to meet the appointment of the English commercial attachés and that at once, thereby creating a still more extensive field for the advancement of commerce than our greatest competitor, and at this time when we have succeeded in gaining the second place.

The reasons adduced by the German papers and the necessity of extending its foreign trade by the means suggested, apply equally well to the United States, and too careful consideration can not be given to the action—in the one instance already taken and in the other contemplated—of these two great powers.

In addition to such consideration on the part of our Government, too much stress can not be laid upon the necessity of our exporters sending out competent salesmen, and by competent salesmen, I mean men having a knowledge of the language and commercial requirements of the country to which they are sent, as well as of the goods they seek a market for.

The habit of American manufacturers in sending out circulars and catalogues printed in the English language, such as are received by scores at our consulates, is practically useless, and it is a matter of astonishment that they do not adopt the same methods as the Germans, who know that to sell their goods traveling salesmen are of primary importance. I doubt if one such circular in a hundred results in an order, unless the article offered is a striking novelty. Such trade literature, having as its object the introduction of staple goods, is probably seldom, if ever, read.

The German is painstaking and neglects no detail in introducing his merchandise. The secret of Germany's vast commercial strides is that her manufacturers make their goods known in every market that offers the slightest prospect of becoming a buyer, and they do not hesitate to invade those having long been under the control of England and other countries. If the American manufacturers evidenced the same indefatigable activity and

persistency in winning new fields for their goods, our foreign trade would show an increase fully equal to what Germany's has been in the past few years.

One fact is evident—the other great manufacturing and exporting countries, as well as the United States, have awakened to the question of consular reform and see in a perfectly organized and equipped consular service the most important factor in trade extension. That this is due in a great measure to the example set by the American consular service and the value of its consular reports is a cause of congratulation for the service and the country.

THOS. EWING MOORE,
Commercial Agent.

WEIMAR, *August 18, 1896.*

IMPROVEMENT OF THE CONSULAR SERVICE OF AUSTRIA-HUNGARY.

I have the honor to transmit an extract from an interesting article of the Volkswirtschaftliche Wochenschrift, published by the Austro-Hungarian Export Association, dated June 4, 1896. It gives the Government estimates of consular expenses for 1897, stating the reason for certain changes and increases of Austro-Hungarian consulates. In reading this article a good many questions suggest themselves in order to draw correct comparisons with our service, but there is no source from which such general information covering all signatory powers could be drawn.

No one can judge better of the helplessness of manufacturers and business men in trying to establish an export business than consuls, and endless is the number of letters written to American firms by United States consuls on this subject. To learn, therefore, how the industrial states develop their export trade is one of the premises necessary in order to be able to offer to our exporters the like facilities.

It will be found that the number of consulates of the foremost industrial nations corresponds to the degree of prominence they take in the world's trade; that they consider the consular service as a pioneer of their export trade, and not as incident to the latter's development, and as a self-supporting institution. In this sense, the consular service is the most tender feeler of a national industry, its best foothold on foreign markets.

The system of honorary consulates is well established among European nations and gives to the office itself, as well as to the professional officers who are permanently employed, a dignity not otherwise to be acquired. The honorary character causes the better elements to apply for and accept such duties, and the professional assistants guaranty a uniform and regular office routine. At the same time, it lessens the expenditures and gives to the professional officers more adequate pay.

MAX JUDD,
Consul-General.

VIENNA, *June 12, 1896.*

[Translation.]

AUSTRO-HUNGARIAN CONSULAR EXPENSES.

Austria-Hungary has at present 13 consulates-general, 122 consulates, 117 vice-consulates, and 157 consular agencies distributed in all parts of the world.

The estimates of the Ministry for Foreign Affairs for the year 1897 amount to 1,244,400 florins, an increase of 68,000 florins compared with the expenditures of 1896. This increase is caused by the reform of the honorary consulate at Hongkong, with 6,000 florins; the appointment of a permanent vice-consul for the consulate in Philadelphia, raising the allowance for that consulate 7,600 florins; the establishment of a vice-consulship at Curityba, Brazil, with 6,000 florins; the demanded increase for the consulate-general in Algiers, with 6,200 florins; that in Calcutta, with 3,000 florins; the representation in the Caucasus, with an increase of 1,500 florins; the change of the consulate in Singapore into a professional one, with 1,400 florins; the substitution of consular officers, temporarily called into the home office, 10,000 florins; the subvention of the Austro-Hungarian Chamber of Commerce in London, with 1,000 florins.

The explanation of these increases will be of interest, even for larger circles. To begin with, the increase of 6,000 florins for the honorary consulate at Hongkong. This port is the most important point of southeastern China, and a junction for the navigation and the commerce of the surrounding countries. The Austrian Lloyd lands there at regular intervals and takes there about 30,000 tons of Austro-Hungarian products.

The future importance of this commercial center results from the fact that the economic status of East Asia keeps awake the general attention and is thus of an increased importance for the commerce and industry of Austria-Hungary. Yet it has been impossible for a number of years to obtain stability in the management of the former honorary consulate in Hongkong. The official incumbents, who, as merchants, were kept there only by their ever-changing business interests, follow each other so rapidly that there is no guaranty for a systematic management.

Now, the Ministry for Foreign Affairs intends to establish a professional consular representation in Hongkong, ranking as a consulate. The appropriation is estimated at 6,000 florins—that is, 1,600 florins as salary for the vice-consul, 2,000 florins additional for his local expenses, and 2,400 florins for office expenses.

For Philadelphia, the delegation of a vice-consul has become necessary to act as assistant and chancellor of the honorary consul. This likewise needed reform necessitates an expenditure of 7,600 florins annually.

Especial attention is directed to the explanation of the expenditures for the consulate in Curityba. Quite a number of our emigrants turn to Brazil. A center of this national emigration is Curityba, where a colony of many thousand Austro-Hungarian subjects have settled. The Ministry for Foreign Affairs intends to establish there a professional consulate. It will be a mediator between emigrants in the States of Parana and Sancta Katherina and the home authorities and act further as a protecting authority toward the respective local governments. The annual expenses are estimated at 6,000 florins.

The Ministry was compelled to send a professional consular officer to Algiers on account of the resignation of the former honorary consul. But inasmuch as this officer could not find a resident Austro-Hungarian subject nor anyone else to take the place, the Ministry had to decide whether to change this post into a professional consulate or to abandon it altogether. The decision, considering our commercial and navigation interests, was naturally for the former. The increase for this purpose is 6,200 florins.

In Calcutta, a prominent merchant was recently appointed consul-general. However, he conditioned his acceptance upon the grant of an assistant, an experienced consular clerk. The appropriation for the latter is 3,000 florins.

As to our representation in the Caucasus it is said: In the district of the Caucasus, important for many reasons, we have but one consular representation, namely, the vice-consulate

at Batum, which, on account of its situation and because it is the seat of only a subaltern local authority, has become a mere local office. The most important point, economically and commercially, is Tiflis, where the higher authorities of the Government and the more important importers and exporters reside and from where the commercial movements and more important events of the whole country can be observed much more easily. The consulate-general in Odessa, therefore, petitioned for a professional consulate in Tiflis, where also the other powers are represented. The Ministry finds this justified and moves for the allowance of 15,000 florins.

The latest events in East Asia and the continually increasing importance of the East Indian commercial highway make the old project to change the consulate in Singapore into a professional one still more pressing. Singapore has 120,000 inhabitants and is the largest and most frequented transit port of East Asia. By its central location, this place is the junction of all navigation to India, China, Japan, the Philippines, the Indian Archipelago and Eastern Australia, and controls the commerce to the Malayan Peninsula up to Penang, then to the neighboring isles, Sumatra and Borneo, also partially to Siam and Cochin China.

Although the share of our Monarchy in the imports of Singapore is comparatively small, the general opinion of experts is that our trade in this port is capable of a great increase. The number of Austro-Hungarian commercial travelers visiting this place is growing.

Singapore is also of special interest to us as an important transit port for our trade with Netherlands India. The place is also favorably situated as an observation point for the extension of export trade with the European states in East Asia, already in many cases absorbed by Japan.

The Austro-Hungarian colony in Singapore, numbering already one hundred, justifies likewise the creation of a professional consulate in order to protect the interests of our subjects. In view of this situation, the ministry intends to change this honorary consulate into a professional one, for which purpose 14,000 florins are needed.

BRITISH COOPERATIVE SOCIETIES AND AUSTRALIAN PRODUCTS.

There are at present in Victoria and will shortly arrive in New South Wales three delegates (Messrs. Joseph Clay, William Stoker, and Benjamin Jones) of the Cooperative Wholesale Society of England. The object of their mission to Australia is to examine thoroughly into the butter-producing capacity of the respective colonies and get full information of the probable progress and development of each to ascertain what factories would be willing to supply the society and upon what terms; to make inquiries with respect to the production of cheese, bacon, lard, frozen meats, fruit, leather, sugar, grain, and tallow and the probable development of these products to Great Britain.

The Cooperative Wholesale Society is a trading partnership of 1,035 retail stores, which hold among them share capital in £5 ($24.33) shares to the amount of £635,541 ($2,606,210.27) and loan capital amounting to £1,085,873 ($5,284,400.94). The former bears 5 per cent and the latter 3 per cent interest. The shares held by each are in proportion to the number of its members, so that every member of a retail store which is in partnership with the wholesale is really a proprietor of that important institution and is therefore personally interested in its success. The cooperative bodies

in Scotland are joined in another federation which is likely to send a delegate of its own to the colonies. The headquarters of the Cooperative Wholesale Society are in Manchester, but there are what are called "districts," of which London and Newcastle are the centers. The English societies cater altogether for 1,000,000 families, including the better-paid working class. The delegates believe that they could trade with Australia in butter, tallow, leather, fruit, and, possibly, frozen meats. They state that their society has depots in New York, Montreal, Copenhagen, Gothenberg, Hamburg, Rouen, and other places, and that they supply the masses of the English people. One-seventh of the total population of Great Britain is, they state, supplied through the society. The secretary was sent to London twenty-three years ago to open a branch upon a guaranty being given by certain people of a turnover of £40,000 ($194,660) per annum. The turnover now is about £2,000,000 ($9,733,000) per annum. The society has its own boot factory (said to be the largest in the world), chocolate and cocoa works, soap works, etc. In the soap works, 50 tons of tallow are used up weekly. The sales of the society last year amounted to over £10,000,000 ($48,665,000), and an increase in this sum of £1,000,000 ($4,866,500) is anticipated for this year.

The flour mill, which is situated on the banks of the Tyne, produces 7½ tons of flour per hour the whole year round and another mill is now being erected on the banks of the Thames. In addition to the one on the Tyne, there are about a dozen others belonging to the society in various parts of England, the total production being valued at £2,000,000 ($9,733,000) annually, despite the low price of flour ruling. The delegates state that there are in Great Britain between 1,300 and 1,400 cooperative societies doing a trade annually of between £58,000,000 ($282,257,000) and £60,000,000 ($291,990,000), of which over £40,000,000 ($194,660,000) is retail distribution. The annual profit of all the trading cooperative societies is about £5,500,000 ($26,765,750), without reckoning interest on share and loan capital. Of this sum, about £50,000 ($243,325) per annum is devoted to educational purposes, such as newsrooms, free libraries, classes for special and technical education, etc. The total amount of cooperative production in Great Britain is nearly £6,000,000 ($29,199,000) a year and the whole of the cooperative societies of the United Kingdom employ 70,000 people.

STEWART KEIGHTLEY,

NEWCASTLE, N. S. W., *July 31, 1896.* *Vice-Commercial Agent.*

NOTES.

Strike in St. Petersburg.—Under date of August 5, 1896, Consul-General Karel, of St. Petersburg, reports as follows concerning the labor strike in that city:

The great strike last June among the weavers in St. Petersburg lasted two weeks, and exceeded in extent and severity every previous movement of the kind in Russia. The immediate cause of the strike, just ended, must be sought in the very slight competition to which Russian manufacturers have been exposed by the lowering of the duties on foreign textile goods by the Russo-German commercial treaty of 1893. The manufacturers, who still make from about 10 to 30 per cent on their capital invested, seized upon this as an excuse to lower wages and increase hours, thus reducing the workmen to about $2.50 a week maximum pay for twelve hours' work per day. Besides, the situation of the workmen is subjected to other hardships, *i. e.*, the irregularity in which the wages are paid and the heavy fines and deductions for misconduct and bad work, in the levying of which the masters and managers are the sole judges. In addition to the question of wages and hours was the recent grievance of the workmen on account of the coronation fêtes, when, on the 26th of May, the factory owners stopped work, according to the instruction from the factory inspection, and paid the workmen for that day, but notified them that no work would be done in the factories the following two days (the 27th and 28th), which would be celebrated as coronation holidays, and refused to pay them the wages for those two days, which the workmen demanded. In St. Petersburg, there are 484 factories, with 79,157 workmen, besides the railway workshops and Government factories. About a week before the strike, the workmen went to the factory administration and asked a reduction of the working hours, which were then fourteen hours—from 6 o'clock in the morning to 8 in the evening, with an hour's intermission for dinner—and demanded that the working day should be twelve hours, from 7 o'clock in the morning to 7 o'clock in the evening, with an hour and a half intermission for dinner and rest; that the beginning of work should be defined with exactitude, according to the rules, and the cleaning of the machines not to take place during dinner time. Complaints were also made of the superintendents being rough to their subordinates and that they took bribes. As there seemed no prospect of coming to a satisfactory agreement, the workmen refused to work, and the strike began June 10 with the Yekaterinof mill, whence it spread rapidly to some score of others. Only the weaving mill of Voronin withstood the pressure, owing to the fact that last year the wages of the workmen

in that mill were increased 10 per cent and that the 105 workmen agitating a strike among their coworkers were immediately dismissed, and the remaining 985 were afraid that they might meet the same fate if they should threaten to strike.

The total number of the strikers amounted to 14,712, and they surpassed all expectations by the quiet and orderly manner in which they behaved. The organization was based on directions from the workmen's secret socialist league. It must be remembered that no public meetings of that nature are allowed in Russia. Nevertheless, the peaceful, although unlawful, way, according to the Russian law, in which the workmen kept from the factories, ruinous to both parties, gave occasion to evil-disposed persons to try to give the strike a political character. Twenty-five inciting placards of different contents appeared, signed by "Union combat for the liberation of the working class," "Labor Union," and "Moscow Labor Alliance." The agitators were trying to persuade the workmen to persist in the strike, explaining the aims of western European workmen, and promising them pecuniary help, which they claimed would come from the German workmen, but which, it seems, never came.

The hardship to which the factory hands were exposed during the strike may be best imagined when it is known that the local branch of the socialist league disbursed only 4,000 rubles as a strike fund, to which was added about 5,000 rubles, subscribed in St. Petersburg among their sympathizers.

Later on, the pamphlets were full of instigations against capitalists, Government establishments, and the imperial power, and the consequence was that the police were busy in arresting and banishing those whom they regarded as suspicious and those who had influence among their fellows. The mayor of the city then addressed the workmen, explaining to them their illegal conduct, for, according to the principle of Russian law, combination to affect prices among workmen or masters is equally illegal, and showed them the way how their demands, if they had lawful foundation, could be complied with, and how they could demand new measures desirable for bettering their condition. This met with success, helped on, no doubt, by the fact that the greater part of the workmen did not sympathize with the strike, but took part therein only to please the group of inciters. Then, their means of existence becoming exhausted, they began to be desirous to return to their work; consequently, the strike began to diminish gradually, and those who did not wish to resume work were ordered to receive the money due them and their passports and return to their villages. In all the factories, printed notices were posted up, stating that the claims which were the cause of the strike would not be examined until work was resumed. Most of the strikers went to work, submitting to the requirements of the Government, and at present the factories are running without interruption. The officers of the factory inspection and of the St. Petersburg police have been commissioned to examine all the circumstances revealed by the strike just ended. A council of ministers was also summoned for the purpose of discussing the

labor question in Russia and the unexpected growth of socialism. Labor legislation, already long projected, will undoubtedly be now pushed forward rapidly.

Wool Market in Russia.—Under date of July 8, 1896, Consul-General Karel, of St. Petersburg, transmits the following statistics relative to wool in Russia:

The principal wool markets in Russia are in Warsaw, Kharkov, Nijni-Novgorod, and Rostoff. In Warsaw, the wool fair just closed differed very little from the previous fairs, the only difference being an advance in prices and that the manufacturers or their agents made, before the fair opened, fewer contracts than last year, on account of the very weak market during the whole past year. For a long time there were no buyers, and only about six weeks before the opening of the fair the rise in the wool prices abroad animated the wool markets here. It was, however, observed that the most careful dealers made large purchases of wool between May 15 and 25. In every case, the favorable conditions of the wool market abroad could not develop in the same degree at the Warsaw market, because the spring goods did not meet with the expected sales, owing to the damp and cold weather which prevailed. The greater part of the merchandise, taken on condition, was returned, and many dealers from the interior governments asked to defer their bills of exchange given for the merchandise bought on time. Thus, there was reason to expect that the demands for wool of the local manufacturers would be smaller than last year, which was confirmed by the contracts made before the opening of the fair.

The reserves of wool from last year in the stores of the Government Bank amounted to 7,612 poods (274,885 pounds) and were nearly equal to the preceding ones—7,775 poods (280,770 pounds). The wool arrivals began, as usual, about May 8, and at the beginning were very quiet, increasing gradually, however. In all, 70,594 poods (2,549,290 pounds) were brought, *i. e.*, 2,203 poods (79,955 pounds) more than last year. The wool brought seemed to be of very good quality, the shearing being done at the proper time and under favorable atmospheric conditions.

The total quantity of wool exposed for sale at the fair amounted to 78,206 poods (2,824,175 pounds), that is, 2,040 poods (73,669 pounds) more than last year. The usual number of foreign purchasers arrived at the fair, but of the local manufacturers only few. The contracts began on the first day the fair opened, and the purchases on the part of the foreign buyers animated the sale and caused the other buyers to close bargains. The wool that was bought was chiefly fine wool (II sort), which can be called middle fine. During the fair 28,000 poods (1,011,136 pounds) of the same has been sold. This quality of wool fully corresponds with the highest sorts, which are offered at the fairs of Silesia and Prussia, under the denomination highest fine. Of the best local wool, 3,000 poods (108,336 pounds) of the prime fine and 3,000 poods of the highest fine, notwithstanding the high prices, were sold

to the manufacturers of cloth. The middle quality of wool was not in much demand, only 8,000 poods being sold. The total quantity of wool sold at the fair amounted to 42,000 poods (1,516,704 pounds), *i. e.*, 54 per cent of the whole amount. The wool was well washed, sorted, and packed, which promoted easy sales. Foreign purchasers paid great attention to these conditions and even gave preference to lower qualities, if they only were well washed and assorted; consequently, the more the wool corresponded with these conditions the quicker it sold.

The prices were as follows, in gold rubles per centner (132 pounds) of well washed, sorted, and packed wool:

Grades.	Prices.	
	Rubles.	
Highest fine	81.00 to 106.65	$62.53 to $82.33
Fine:		
I sort	70.00 to 77.00	54.04 to 59.44
II sort	63.00 to 69.00	48.64 to 53.27
Medium	49.00 to 58.00	37.83 to 44.78

The above prices can not be very well compared with those of last year, because last year, during the first two days of the fair, there were no purchases made, and during the latter days only 21,500 poods (776,408 pounds), or 28 per cent of the whole amount, were sold—6,500 poods (234,728 pounds) of the fine II sort and 15,000 poods (441,680 pounds) of the middle. The principal bargains were closed two days after the fair, when the prices had greatly dropped, and the prices at which those bargains were made were not made public, but were kept strictly secret. In every case, the present prices paid were higher than last year's by 90 copecks (69 cents) for the highest fine qualities, 1.80 to 3.60 rubles ($1.39 to $2.78) for the fine I sort, 4.50 rubles ($3.47) for the fine II sort, and 1.80 to 3.60 rubles ($1.39 to $2.78) for the medium. Nevertheless, this rise of the prices can not be considered absolute, because the higher prices were paid at the beginning of the fair and only for the highest grades of wool with reference to the washing and assortment, and the smallest deviation from these conditions caused a fall in the prices. Even wool of last year's washing and packing was rejected by the purchasers. Wool badly washed and dusty, such as was brought from the governments of Lomzsha, Plotsk, and others, was sold at prices no higher than those of last year, and even lower.

After the fair closed, the amount of unsold wool amounted to 36,000 poods (1,300,000 pounds), of which 10,000 poods (361,120 pounds) are in the hands of dealers and speculators, and the remainder is kept by commission merchants, who expect that the home manufacturers, who bought much less at the fair than usual, will have to purchase more wool in order to meet their requirements. And to a certain extent their expectations have already been fulfilled, for after the fair closed some small manufacturers from Tomashovo, Zgerzsha, and even Belostock came to Warsaw to make their purchases, but

the prices they offered were below those paid at the fair, which were refused by the sellers. The prevailing opinion among the holders is that the foreign purchasers, who animated and kept up this year's fair and closed considerable bargains in the provinces, still have not enough to satisfy all their requirements, and will therefore have to call at the Warsaw market again. In view of the above, the market is very firm, and the sellers very reserved.

The following were the prices of unwashed wool per pood (36.112 pounds) in June: At Rostoff, 7.90 to 9.15 rubles ($6.10 to $7.06); at Odessa, wool from Crimea, 6.50 to 6.75 rubles ($5.02 to $5.21); wool from Tauride, 7.25 to 8.75 rubles ($5.60 to $6.75); wool from Kherson, 7.75 to 9 rubles ($5.98 to $6.95); at Moscow, white Bukhara wool, 5.80 to 5.90 rubles ($4.48 to $4.55).

American Enterprise in China.—Under date of May 25, 1896, Mr. Charles Denby, jr., chargé d'affaires ad interim at Peking, transmits the following:

I have the honor to report that the interest which American capitalists and railroad and ship builders are taking in China seems to be on the increase. Among these, the American Trading Company, of New York, London, Yokohama, and Shanghai, has been the longest in the field. In addition to its usual business of exporting and importing, this company has recently become the agent of the Cramp Shipbuilding Company and of the Union Iron Works. It also represents an American railroad syndicate and has submitted bids for the building of a railroad from Soochow to Chinkiang and for the building of an electric tramway in the foreign concessions at Shanghai. These bids have not, as yet, been accepted. During the past winter, this company was also agent for an American banking syndicate and entered into negotiations for a loan to China. It is this same company that has secured a concession for a railroad from Chemulpo to Seoul, in Korea, and that has sold two ships on behalf of the Cramp company to the Japanese Government.

Mr. A. W. Bash, of Port Townsend, Wash., is the representative at Peking of a wealthy combination of capitalists in New York, who wish to secure railroad, mining, and other contracts in China. This syndicate has organized a company called the American China Development Company, incorporated under the laws of the State of New Jersey. Their plans are far-reaching and comprehensive, but they have not yet been brought to a sufficiently definite form to justify a report thereon. It is supposed, however, that they will confine their attention to North China, and that they have at present no projects south of the Yangtze River.

The Bethlehem Iron Works have been represented in Peking during the winter by Captain Zalinski, U. S. A., retired. This company wishes to obtain orders for coast defenses, armor plates, disappearing guns, quick-firing guns, ammunition, etc., and its agent also submitted to the yamen plans for submarine boats. The yamen seems at present disinclined to enter on naval reconstruction, against which they are strongly advised by Sir Robert Hart,

inspector-general of customs. The foreign-customs revenue is now almost entirely pledged to pay the Russian-French and German-English loans of 200,000,000 taels. A further indebtedness of 50,000,000 taels, on similar terms, would require to meet it the balance of the customs revenue now remaining, and would leave China without revenue from this source for many years to come. Want of funds will prevent the purchase of a large fleet or great investment in coast defenses.

To another American citizen, who has recently arrived at Peking on a financial mission, particular interest attaches. This is Mr. Yung Wing, a Chinese by birth, resident at Hartford. This is the gentleman who, in 1872, accompanied the Chinese educational mission to the United States. He has recently been ordered to Peking by the Emperor to discuss with the yamen the practicability of establishing a national banking system similar to that of the United States. Such a system, if honestly and intelligently carried out, could be made to relieve China of a great part of her present financial burdens and put her currency upon a better footing. No difficulty would be found in taking up several hundred million taels of bonds, to form the basis of a banking circulation, but it is not certain that the money which the Government would so obtain would be wisely used. Mr. Yung Wing has the advantage of speaking Chinese perfectly. He dresses in Chinese costume, and he is in intimate social relations with the ministers of the yamen and other officials.

All of these companies and agents have resorted to this legation for assistance and advice, which have been freely and impartially given. They have been aided by introductions to Chinese officials, by the making of translations, and by unofficial assurances of the standing of the firms they represent.

American Machinery for the Panama Canal.—Consul-General Vifquain, under date of Panama, August 22, 1896, reports the following:

The Department may be interested in learning that, as in former years, the Panama Canal Company have again come to the conclusion that American machinery is the best to advance the gigantic labor they have to accomplish, and to that effect have purchased a first lot of hoisters and conveyers from the Lidgerwood Cable Way Company, of Liberty street, New York, seven in number. Each cable way is a very ponderous and expensive affair, but a very great labor-saving engine. The weight of each machine, complete and ready for action, is 200 tons; they cost $14,000. They have been used with great success at the Chicago-Joliet Canal.

A French engineer was sent to examine the machinery in use on the construction of this canal, and from all the various engines seen there, he selected the Lidgerwood cable ways as the best adapted. It was the intention to place one hundred of them in operation, or enough to dispose of 50,000 cubic meters of dirt or stone every ten hours.

But Jamaican negroes, instead of Americans, are to do the work, which will be much to the disadvantage of the machinery, as these people have not the least conception of such a stupendous affair and are almost overawed at the sight of it. Two of them were killed the very first day because of their ignorance, and their death has caused terror among the others. The second disadvantage under which the machinery will be operated, is that the towers of the cable ways, instead of being on movable platforms, as at Chicago, are erected on permanent foundations, thus necessitating the building of new cement foundations at each removal, and consequently a great loss of time, the very thing that this engine was intended to prevent. The result of the oversight in not insisting on American labor for the operation of the engines, at least until the laborers here were fully acquainted with their working, may cost a large sum, besides impairing the reputation abroad of a masterpiece of American machinery. Another cable way has already found its way here from France and six of them are now being put up.

Settlement of the New South Wales Coal Strike.—A report dated May 9, 1896, entitled "Strike of coal miners in New South Wales," written by Vice-Commercial Agent Keightley, of Newcastle, was published in CONSULAR REPORTS for July, 1896. This report deals with the conditions of the coal trade and the causes leading up to the strike.

Another report, dated July 29, 1896, announcing the settlement of the strike has been received from Mr. Keightley.

The settlement was brought about through the efforts of the Premier of New South Wales, Hon. G. H. Reid. The following are the bases of the settlement of the strike:

It was decided by the mine owners, out of respect to the Premier and in acknowledgment of his efforts to promote a settlement of the dispute, to offer the miners an additional 1d. (2 cents) per ton, making the hewing rate 2s. 11d. (71 cents) per ton, prices for yardage and other work to be in proportion. The proviso against further reductions before the end of 1897 was, however, withdrawn. A letter embodying this ultimatum was forwarded to the Premier the same evening and was by him transmitted to the miners' general secretary. A meeting of the miners' delegate board was held on the 9th ultimo to deal with this letter, but no decision thereon was arrived at and the offer it contained was remitted to the lodges. Meetings of the latter took place during the following days and a ballot upon the advisability of accepting or rejecting the new terms was ordered. This being taken, resulted in a majority of 129 declaring themselves in favor of their acceptance. The strike was officially declared to be at an end on the 14th of July, after having lasted from the 27th of April last. The work of restarting the mines was set about at once, and now, everything is proceeding quietly and smoothly once more. At several of the collieries, the output is not so large as the trade demands or the capabilities of the pits permit, owing to the fact that

there is a dearth of miners in the district just now. This drawback will doubtless be removed shortly, for men who went elsewhere seeking work during the strike will, having homes here, return now that the mines are in full swing again.

Great activity is being displayed in loading the ships that have laid here so long and the coal-shipping and harbor officials are exerting special efforts to minimize the period of further detention of these vessels.

The miners have made their condition worse, rather than better, by the strike. Before the stoppage of work, the hewing rate paid at some collieries was 3s. (73 cents), at others 2s. 11d. (71 cents) per ton. A few of the smaller mines paid lower rates, ranging from 2s. 6d. (61 cents) down to 2s. (49 cents) per ton. The latter have resumed work at the old rates, while those at which 3s. (73 cents) was paid have reduced to 2s. 11d. (71 cents), with payments for pillar and yard work, etc., in proportion.

The men struck for a general advance of the hewing rate to 3s. 6d. (81 cents) per ton and the restoration of the conditions of the 1888 agreement. This agreement gave them advantages which they do not now possess.

Development of Siberian Industries.—Under date of St. Petersburg, August 22, Consul-General Karel reports as follows:

The further the construction of the Great Siberian Railway proceeds to the east and the more closely Siberia is becoming connected with the interior of Russia and her whole railway system, the more industrial progress advances and the vast area of land is developed. Nearly every week, the Siberian newspapers contain information concerning the opening of new factories producing such goods as were brought there before either from the Urals or the interior of Russia. During this month, will be opened the first sugar factory in Semipolatinsk, which, naturally, will necessitate the establishment of a sugar refinery. Two large porcelain factories will also be started in Tomsk.

The construction of the Siberian Railway has, however, at present, the greatest influence on the development of industries, which are mainly necessary for the construction of the road itself, such as mining and pit-coal industries. The establishment of immense iron works at Werchoturia, with a stock capital of 18,000,000 rubles, will be of great importance to the whole mining industry of the East. The founders of this undertaking are Englishmen, who procured the best technical skill of their country for the purpose. They compose a stock company which expects to build a branch road to the Siberian Railway, running from Werchoturia to the Soswa River.

The pit-coal industry is, as yet, in its infancy, and the coal is more expensive than wood fuel. Large coal mines exist in Tomsk, which are supplying some of the factories in that country with fuel. The Tobolsk district is the largest consumer of the coal; the quantity used in the past year amounted to 950 tons. On account of the high price of the coal in propor-

tion to the price of the wood, it is difficult to introduce it for general use. According to a report of the Sibirski Wiestnik, a pood of coal (36.112 pounds) costs in Tomsk and Tobolsk 19 copecks (9¾ cents), or $5.40 a ton. A cubic fathom (7 feet) of wood weighing 225 poods (8,125 pounds) costs in Tomsk 13.50 rubles ($6.94); in order to replace the heating capacity of this quantity of wood by coal, it would require 75 poods (2,608 pounds) of coal, which would cost in Tomsk 15 rubles ($7.71). Thus, only those can allow themselves a continual use of coal who require such a small quantity of heating material that the difference of price need not be taken into consideration. Of course with the development of the coal industry, the prices of coal will decrease, so that, in a few years, coal will replace wood for fuel purposes. This will also stop the rapidly increasing destruction of the Siberian forests.

The works at Nicolaev, which were not able, under the former administration, to fill all their orders, have passed into other hands, with increased capital, and it is expected that now they will be able to satisfy all the requirements of the railway.

One of the latest reports from Siberia announces the formation of a company for the mining of gold on the eastern slope of the Urals. It intends to procure gold by chemical means, according to the American method, by which process 20 per cent more of pure gold is gained than by the washing method. The capital stock of this company is stated to be 2,500,000 rubles.

It is to be expected that when the Great Siberian Railway is completed to its terminus (Vladivostok) and a direct transportation line is established between Vladivostok and the United States by the shortest Pacific Ocean route, the Siberian line will have a great effect on the traffic from the United States, and that our commercial intercourse with European Russia will increase and new openings for American products will be provided in Siberia.

Germans and the Central American Exposition.—Under date of Annaberg, August 15, 1896, Consul Stephan writes as follows:

In announcing the Central American Exposition, which is to be held in Guatemala in 1897, the German boards of trade especially recommend manufacturers to exhibit tools and hardware of all kinds, wood carpets of hard wood only, coarse leather goods, leather gloves, plows, harrows, and other implements and machinery used on coffee and sugar plantations, liquors, preserves, pianos, firearms, stationery, paper, cloths, and cotton goods. The German steamship lines Kosmos and Hamburg Pacific will allow a reduction of 25 per cent on all freight intended for exhibition, and the passenger rates from Hamburg or Antwerp to San José de Guatemala are fixed at 1,200 marks for first cabin, 750 for second cabin, and 350 for third cabin.

Great efforts will be made for a good showing at that exposition. Germany has important interests in Guatemala. Not less than one-fifth of all the coffee plantations are in the hands of Hamburg firms. Banking and railroad building is conducted largely with German capital. It is true, the exports thither have decreased somewhat during the past few years. The

imports from those countries, however, have more than trebled since 1889. The Germans propose to recapture the lost ground and, in addition, gain new markets, and we may expect that they will not be wholly unsuccessful. They know the taste of those people and will present only what is desired and salable there. They will be represented by agents acquainted with the country, the merchants, the language, the business usages, etc., and their terms will be liberal—all of which will help them to succeed.

Just at the present time, where special efforts on our part are made to extend our markets in South and Central America, the Germans are doubling their energies to maintain the field. They know that the United States supply little margin for new markets; sooner or later they will be a lost customer to them. So they are turning their attention more and more to South and Central America and other new countries, such as Roumania, Bulgaria, the Transvaal, Japan, China, etc. That they are successful in their efforts can, perhaps, best be seen from the many steamship lines running between German ports and those of these new countries. Only four weeks ago another line of steamers began to ply regularly between Stettin, calling at Rotterdam, and South American ports. Last week I met a gentleman who had come all the way from Buenos Ayres to Saxony to buy machinery. Asked why he did not buy in the United States, he said that in Germany he could get what he wanted, not what the Germans desired to sell. Besides, he said, there were better shipping and banking facilities with Germany than with the United States.

There is every reason for our American manufacturers to be untiring in the solicitation of South and Central American trade. To be well represented at the coming fair with a full line of goods needed down there, and by a person fully acquainted with the country, the people, and language, is only the beginning of the introduction of American goods.

Bicycles in Ireland.—Under date of August 18, 1896, Vice-Consul Piatt, of Dublin, transmits the following information relative to bicycles in Ireland:

Though the present year has been the busiest yet known in everything pertaining to the cycle trade, the general opinion is that the coming year will far exceed it in business done. During the season now closing, it has been no easy matter to secure a machine from the first-class makers without considerable delay, as they have been unable to meet the large demand. It has been a common complaint that many weeks, and even months, have elapsed between ordering and receiving a machine. The consequence of this delay in delivering bicycles is that many of the Irish agents are looking to the United States for a part of their supply, and are even at present stocking their depots with American machines or looking out for American agencies, and if our manufacturers properly use their opportunities, there is no doubt but that American cycles will enjoy a large share of patronage from the cycling public, and that the best grades of American machines will obtain as firm a footing and ready a sale as the best British makes now have.

At the present time, almost the entire cycling press of the United Kingdom is much exercised over what is termed the "American invasion." There is apparently a general distrust of American machines, and paragraphs and letters intended to prove that English machines are their superiors in quality and design are of frequent occurrence. Criticism is always valuable in that it shows where an improvement or change might be made with advantage or

else where the critic is prejudiced. Nearly every detail on the machine is adversely criticised and the suggestion made that it must be "brought up to date, according to English ideas," before cyclists will approve of it. The parts which meet with the most general disapproval are the shape of the tubes, the particular form of the front and back wheel, the crank-bracket bearings, the width of tread, the chain adjustment, insufficiency of mud guards, and, especially, the use of single-tube tires. Criticism does not stop with what is on the machine, but the absence of a gear case is always commented on, although the majority of English bicycles do not have it fitted unless specially ordered. The machine is liked on account of its lightness, but there is a general impression that lightness is obtained by a sacrifice of strength, and a common question is, Will it last as well as our machines? Especially is this the case regarding the use of wooden rims and the lightness of the chain.

American bicycles, to command a ready sale, should be so built that a gear case can be fitted, if desired, as many persons think a gear case almost indispensable, owing to the mud during the wet weather. Detachable or single-tube tires should be optional, as a strong prejudice exists in favor of the former. Easily detachable brake and mud guards should accompany every road machine, the former rubber faced and the latter ample, but light. Every machine should be accompanied by a small pamphlet giving full, but concise, information regarding the adjustment and care of the particular make. Each agent handling the machine should be fully acquainted with all the details and know why they are so made, and each agency should be fully stocked with all parts. In the larger cities, fully equipped branch houses should be established.

Our manufacturers should absolutely refuse to alter designs or details to suit purchasers, if by so doing they are of opinion their machines would be weakened or their ease in running destroyed. Alterations should only be made where, by doing so, an improvement will be adopted, or where the change is immaterial and a mere matter of taste. If manufacturers only produce machines which practical tests show to be the best, the public will in time recognize that manufacturers know more regarding the scientific construction of bicycles than the outside public, and the fittest will survive.

Agricultural Exposition at Kiev.—Consul Stephan reports from Annaberg, August 17, 1896, as follows:

The agricultural exposition which is to be held in Kiev, Russia, from July to October, 1897, seems to have been wholly overlooked by our consuls. In my opinion, this exposition is sufficiently important to have the attention of our manufacturers called to it. The Germans and Austrians are preparing to be well represented. Our manufacturers should not neglect to be represented better.

The exposition will be divided into eighteen sections, as follows:

Agricultural group.—Agriculture, horticulture (kitchen garden, vineyard), forestry, cattle breeding, bee culture, sericulture, fishery, manuring, agricultural implements.

Industrial group.—Salt works and mining, vegetable-fiber webs, food, smelting, products of manual labor, metals, machinery, tools, apparatus, building material.

House industries of the agricultural population.—Industry of vegetable products; industry of animal products; ceramic and metallurgic industries, scientific section.

Foreigners will be permitted to exhibit their goods noncompetitively. Application must be filed with the board of directors of the Agricultural Association at Kiev six months previous to the opening of the fair. Goods intended for exhibition must be delivered between May 15 and June 15, 1897, with the exception of animals, for which a special time will be fixed.

Zante Currants for the United States.—Consular Agent Crowe, under date of August 7, 1896, reports as follows concerning the shipment of Zante currants to the United States:

I deem it my duty to report that whereas Zante currants could not be shipped for sometime past to the United States, owing to their being the only currants not on the free list, a change has taken place since all Greek currants are now liable to the same duty. Consequently, 1,000 barrels of Zante currants were shipped for New York on the 18th ultimo per British steamer *Bolivia* and 550 barrels of the same growth on the 20th ultimo per British steamer *Pontiac* for the same destination. Both shipments, if I am rightly informed, were for account of Mr. Schizas, a merchant residing at Patras, and shipped here by his correspondents. As no invoices have been presented at this agency to be certified, there is reason to suppose that this was done at the United States consulate at Patras, as is usual for shipments made at various ports of the Peloponnesus where no United States consular representative exists. But in the Peloponnesus, a uniform and fixed export duty on currants is levied, whereas in Zante and the other Ionian Islands producing currants an ad valorem duty is levied, which is fixed every Monday by the local authorities, according to the price paid during the foregoing week by purchasers.

Swiss Citizenship.—Consul Germain, of Zurich, under date of August 20, 1896, sends the following information relative to Swiss citizenship:

Once a Swiss, always a Swiss—this is practically the case with the children of this Republic. Anyone born of foreign parentage in Switzerland might remain all his life in the country and never become a citizen thereof, unless he chooses to purchase that citizenship, which is the only mode of Swiss naturalization.

Swiss people emigrate to America, become naturalized American citizens, in accordance with section 2165 of the Revised Statutes, namely, by renouncing and abjuring all allegiance and fidelity to the Swiss Republic, and if for some cause or other they return to their native land, they are received with open arms as of yore as still belonging to the fold, notwithstanding the fact that they have abjured and renounced, and are allowed the full privileges enjoyed by resident native citizens who never left the land.

Switzerland has a paternal government. It takes jealous care of its children. No matter how often and in how many different countries a Swiss has lived and been naturalized, when he returns, all is forgiven and he, as well as his family, can enjoy all the benefits of citizenship and can claim support, if poor, from the commune to which he belonged before emigration. I might here mention that to become a Swiss citizen is like joining a benevolent order or becoming a member of a mutual life benefit association in America. The first step to be taken is to select a commune to which, after a residence of two years, application of citizenship is made, in order to establish residence, or home-Gemeinde, become a member of the fold, and a partner in the estates owned by said commune. Now, every commune is a little commonwealth in itself, owns real and other property, as meadows, forests, farms, houses, etc., and has a set price, in due proportion to its assets, to be paid for admission by candidates. The price varies according to the wealth of the commune; in some it takes $100 to become a "burger" thereof, while in others it takes $400, $600, $800, $1,000, and up to $2,000 for membership. After being accepted by the commune, the cantonal and federal authorities have to be applied to, and, if found worthy, the commune's election is ratified and the applicant acquires Swiss citizenship.

The fee charged by the federal authorities to each candidate is $7 for making out citizen papers, in addition to the sum paid the commune.

The Swiss Government does not question the right of naturalization of its citizens in foreign lands, but a Swiss living in a foreign country, together with all the children he may raise there, are still considered and claimed as Swiss and residents of the home commune if ever they care to avail themselves of that privilege. The only grounds for which they will release one of its citizens and allow him to really renounce his allegiance in due written form are the following: (1) When a Swiss returns to his native land and refuses to pay his military taxes, beginning from the time he attained his twentieth birthday to the time of his return, proclaiming that he is no longer Swiss, but an American citizen, his passport serving as evidence; (2) when a native Swiss, naturalized in America, inherits part or whole of an estate and demands his share thereof, the authorities, if there is any reason to believe that he might return impecunious and become a charge on his commune, will refuse to pay it over to him unless he proves his American citizenship and renounces formally in writing his allegiance to Switzerland and releases his commune from claims he might have against said commune by reason of such citizenship. The commune will then apply to the cantonal government

for a release, and when the formality is gone through (which will last from six months to a year) the commune will pay out what is due and strike him off the rolls of membership forever.

Hawaiian Sugar Shipments to the United States.—Under date of August 13, 1896, Consul-General Mills transmits the following sugar statistics:

During the six months ended June 30, 1896, the total exports from Honolulu to the United States were valued at $8,748,526.40, as against $4,949,916.27 for the corresponding period of last year, an increase of $3,798,610.13. Of these total exports, $8,542,781.64 represented the value of sugar shipped from this port, leaving shipments from all other ports $205,744.76.

Of the total exports, $2,457,532.65 of sugar was transported via Cape Horn, all being consigned to New York, except a cargo valued at $211,073.46 per ship *Joseph B. Thomas*, which cleared for Boston.

The vessels carrying this sugar to the Atlantic coast and the values of their respective cargoes were as follows:

Vessels.	Value.	Vessels.	Value.
Reaper	$136,738.80	Roanoke	$385,077.63
W. F. Babcock	237,021.80	Dirigo	357,793.28
Indiana	147,639.09	Pactolus	209,888.50
Iroquois	239,101.82	John McDonald	253,991.22
Kenilworth	279,207.05	Joseph B. Thomas	211,073.46

In addition to these shipments, since July 1 the *Commodore* cleared for New York with sugar invoiced at $225,316.42, the *Lillie Starbuck* carried $203,503.65 worth, and the *Belmont* $160,012.77 worth of sugar to the same port.

This brings up the total value of sugar shipped from this port around Cape Horn to our Atlantic seaboard during the present calendar year to $3,046,368.49.

Industrial Establishments in Maracaibo.—Consul Plumacher, under date of August 15, reports as follows concerning the establishment of new industries at Maracaibo by Americans:

The past year has brought us two new enterprises—a steam laundry and a beer brewery and ice factory. I have not reported sooner upon these recently established industries here, as I wanted to see if they were successful. Of the first, I had but little doubt; the latter I was not sure it would be possible to manufacture in a tropical climate like Maracaibo, where the standard temperature the whole year round is between 80° and 90° F.

The American Steam Laundry, with American machinery, has a capital of $20,000, and is under the management of an American gentleman. In former days, the Maracaiboans were dependent upon native washerwomen and their patience was severely tried, as they had often to wait three and four weeks before the articles were returned. They knew that new shirts would return without buttons and ruined from the beating on the stones at the lake shore; they knew that the male friends of the washerwoman would

enjoy the use of their clothes for at least a fortnight, and hence the patrons labored under constant fear of contracting skin disease. Since the establishment of the Maracaibo Steam Laundry, all these disagreeable factors have vanished; the patrons are well served, can have their laundry at short notice, much cheaper, and returned in good condition, and can, like other civilized communities, enjoy well-starched shirt bosoms, cuffs, and collars.

The Compañia Anonima Cerveceria de Maracaibo is an establishment founded by foreigners, mostly resident Germans, with a capital of about $200,000. The brewery has all its machinery from Winterthur, Switzerland, with the best improvements possible. They brew the so-called Bavarian beer and have an expert brewer from Bavaria as superintendent. In connection with the brewery is an ice factory of great capacity. The beer is sold to the retailers in barrels of from 7 to 100 liters, and is retailed by them at 5 cents a glass. The beer itself is a good beverage of the same kind and strength as is generally drank all over Germany. The company had in the first month a daily sale of 1,000 liters, and as people become accustomed to it more and more, it may have the effect of doing away gradually with the custom of drinking the imported poison miscalled in this country "French brandies." The company intends to buy at wholesale ice boxes in the United States and rent them out to families, furnishing daily the ice and beer desired. This will be of great advantage, as it enables a family to keep their daily food in good condition and enjoy a cheap and cool glass of beer, where formerly they had to pay 30 cents for a half bottle of stale imported beer. The ice is sold at 1 cent a pound at the factory, and its cheap price permits its use by the poorer classes.

The sanitary benefit which it gives to our hospitals and to the sick is of great importance in this tropical climate, and will no doubt be the means of saving the lives of many.

Since the establishment of the ice factory, a multitude of soda-water stands have sprung up at convenient places, and in time these will help to break the habit of drinking strong liquors.

Railway Material Wanted in Egypt.—Vice and Deputy Consul-General Washington, Cairo, August 14, 1896, submits the following:

I have the honor to inform you that the administrative council of Egyptian railways have requested that the specifications for furnishing and laying iron girders for the line to be built between Nag-Hamadi and Keneh be forwarded to the Department and given such publicity as may prove advisable with the view of inviting estimates upon same from American contractors. It is desired that each estimate should be made upon the individual girders, and also on the total number required, and sent under seal addressed to "M. le Président du Conseil d'Administration au Caire," with an interior envelope addressed "Offre pour la fourniture et la posè des tabliers (girders)

métalliques de la Ligne de Nag-Hamadi Kéneh." Bidders should, at the time of making their bids, deposit the sum of £400 (about $2,000), provisionally, until the award is made, and all bids must be submitted by October 30, 1896. The usual reservation covering the right to reject any and all bids is saved. The specifications referred to are transmitted under a separate cover.*

Goods Entering Spain from Gibraltar.—Under date of August 12, 1896, Consul Sprague reports:

Regarding the negotiations which have been for sometime under way between the British and Spanish governments for the entry by land from Gibraltar of merchandise in general, I have now to state that reports are circulating that these negotiations have recently been suspended at Madrid, whence the Colonial Secretary has lately returned to his post, due, it is surmised, to claims on the part of the Spanish Government in conection with proposed extra restrictions affecting the retail trade of tobacco from Gibraltar. The British authorities here are very reticent on the subject; nevertheless, the commercial community of Gibraltar show considerable disappointment, while the few still engaged in the tobacco trade are somewhat pleased at the presumed suspension of negotiations at Madrid.

The New Cuxhaven Harbor.—Consular Agent Starke, under date of Cuxhaven, June 22, 1896, transmits the following report:

The new Cuxhaven harbor works, having been under construction for the past five years, at a cost of about $1,750,000, are now practically completed, with the exception of some final dredging work, and will be opened for traffic in the latter part of this year. Numerous and unexpected difficulties were met with in the course of construction; among others, an immense accumulation of water, the overcoming of which reflects great credit upon the engineers and others engaged in the execution of this important work. The total area of the harbor is 60,000 square meters (645,600 square feet), and there is ample room for extension, should this at any time be found necessary. The depth is 8 meters (26½ feet) at low-water mark. The entrance, 100 meters (328 feet) wide, is formed by two solid masonry jetties 120 meters (393 feet) long, alongside of which steamers of the greatest draft of water can be berthed, thus enabling passengers to be landed and forwarded direct to their destinations by railway.

A length of 200 meters (656 feet) of quay wall has been rented to the Hamburg-American Packet Company for a term of fifteen years, and the large mail steamers of this company, instead of proceeding 40 miles up the river to Brunshausen, will in future load and discharge cargo here and be dispatched

* Two large volumes, in French, filed in Bureau of Statistics, Department of State.

with passengers and cargo from this port direct to the United States. Space has been provided for a dry dock, but the construction of the same has been left to private enterprise.

The question of dues upon vessels entering the new harbor is not yet definitely decided, but it is proposed to charge the same dues as are levied in the Hamburg harbor, with certain modifications.

I have further to report that the railway connecting Cuxhaven with Geestemunde, under construction for about five years, at a cost of about $1,429,000, was opened on the 1st of June last.

Hitherto, Cuxhaven, admirably situated at the entrance of the River Elbe, has been merely a port of refuge for vessels in distress or seeking shelter from northerly and westerly gales, and also for vessels prevented by ice in the river from proceeding to Hamburg and neighboring ports; but the aforesaid valuable improvements will doubtless add considerably to the development and importance of the place, both from a commercial and a military point of view.

Germany and the French Exposition of 1900.—Consul Monaghan, of Chemnitz, reports as follows, under date of August 20, 1896:

The Empire has made known its determination to exhibit at the World's Fair to be held in Paris in 1900. The exhibit is to be bigger and better than was originally planned. The imperial commission is to be made up largely, if not entirely, of the men who made Germany's success so great at the Columbian Exposition in Chicago. The newly appointed commissioner has gone to Paris to secure for the Empire such place and space as will permit of her making an exhibit that will be in keeping with her rank among the nations, both as a political and industrial power. The press of the Empire is uncertain as to whether it believes it best for the Empire to be represented in the French capital. The tone of the press, thus far, is that there has been too much exhibiting. "Still," it is urged, "if the Empire does exhibit, it must do it on a scale not less grand and imposing than at Chicago in 1893. Out of that we came with flying colors. The world has not got over wondering at our capacity to meet any demands on our industrial endeavors. It needed huge exertions to get the Empire to go to Chicago. To-day nobody doubts the wisdom and farsightedness of those that urged us to go. The going thither involved efforts and expenses that will be excluded from an exhibit at Paris. While it may not be necessary to exhibit to earn a name, gained already at Chicago, it may be best for the world's peace. When the Imperial Government, that has done so much to help develop the nation's industries, asks merchants and manufacturers to exhibit, patriotism puts it out of their power to refuse. With the exception of a few artists, the Empire took no part in the last Paris exhibition. It is time to not only tell France and the world, but to show them, that all the Empire's efforts are for peace. That we can lose nothing is a powerful

argument for us to exhibit; that we are sure to gain a great deal, is a stronger. We must make every effort to have the exhibit in every way what our best friends would wish it. Now that the nation is determined to go, it is the duty of everyone that can go or who has anything worth exhibiting to be there. We have nothing to hide, but much of which we are proud. The world rings with the fame of many of our manufacturers. Chicago sent us customers from every country on earth. The exhibition does not open for three and a half years. During that period, we have ample time to make such choice and preparation as will win for us new honors. Nor is anything lost to the individuals taking part. While it is true that it costs a great deal of money to exhibit, the money comes back in new orders or in the acquired capacity to keep what one has already won against all competitors. What is worth doing at all is worth doing well. It is not possible to keep away. The civilized world wants us to exhibit. It is good for us to go. It is a duty we owe to the demands of the times for peace. While in a sense, we are free to do as we please, in a larger and better sense, we are bound to go. It is not easy to evade international responsibilities. Even if it called for sacrifices, which it does not, courtesy, in which an Empire like ours never should be lacking, urges us to go," etc. Such are the sentiments of leading papers, merchants, and manufacturers.

It is evident that the exhibit is to be equal to if not better than the one made at Chicago in 1893. Every year adds to the Empire's capacity to exhibit and compete. It will be seven years from the Columbian to the Paris exhibition. Anyone familiar with this nation's annual progress knows how much that means. What was won at Chicago has only been a spur to further endeavor. No one will be more surprised at Paris than those who "wondered" at Germany's splendid exhibit at Chicago. Exhibitions come high; but they pay. At this moment, there are large exhibitions going on in Berlin, Dresden, and Nuremberg, to say nothing of those in small cities and districts.

Germany and Siberia.—Consul Monaghan, under date of Chemnitz, July 20, 1896, reports:

Germany is looking to Siberia for food products. As the great 8,000-kilometer (5,000 miles) railroad across the Russian Empire to Vladivostok nears completion, interest in its importance grows. With its completion, the world's ways of supplying Europe with food and raw products is to change. It is to open up the vast East, as it was never opened, to trade; it is to make Siberia the competitor of Bulgaria, Austria, the United States, and all South America in supplying corn and cattle, gold and silver. The steppes and wastes of what was once deemed a cheerless desert are to blossom with harvests, whose richness may not now be measured. Siberia alone is as large as all Europe. Over its plains roam countless herds of cattle; in its hills are hidden huge quantities of all kinds of minerals—coal, iron, and

gold. Editors of leading papers are putting the German people on guard. They want them to wake up and work hard to get the inside track. They urge the folly of waiting till others have gone in and gathered the best places. They point out the Empire's losses because she began her colonial policy too late. This is cited as an eloquent illustration of what a stupid conservatism and hesitating policy brings. They urge the sending of an able consul to Vladivostok to represent and look after German interests. That city is to be the terminus of this great transcontinental line. It is to be the great commercial port of that part of the world. It is urged that a consul be sent who has the capacity to examine and compare—a man who can and will give all his time for the good of his own country. They do not want a merchant living in Vladivostok to be made consul, for his time, they argue, will be too much taken up with his own affairs. "We want someone," they say, "who will be able to see where we can sell as well as buy; a man is wanted who will go over all the ground carefully, study it in detail, reporting to the home Government as often as he finds anything worth telling. The consul should be a man of affairs. It will not do to send a man who has had no experience. On the contrary, the ablest man in the service is the one to send. The task before him is one that will give him work all the time for all his faculties. Nor must our merchants depend on Government initiative or effort alone; they must make efforts, and, if necessary in the beginning, some sacrifices. A regular line of steamers should ply between Vladivostok and Hamburg, Bremen, or Stettin. The Americans do it. They sell, now, almost all the manufactured and colonial articles handled in Vladivostok. England's commercial agents have gone out to Siberian cities; so, too, have the commercial pioneers of Belgium and France. It is time for Germany to take action, if she is to get a firm footing in those places. The imperial consul should show the way, but the merchants must spur the State on to new efforts. This is the only way to win, especially against competitors like England and the United States. The population of Siberia is growing rapidly. Not only will that vast empire send out immeasurable food products, minerals, etc., but it must buy. These are the facts to be forced home. Her food products and raw materials will be cheap, so cheap as to shut out all other competitors. If we get in, we win new and vast markets for our rapidly extending industries and bring back those cheap foods, minerals, etc. If we ever had good reasons to work hard to win new markets, we have some here. Not an hour is to be lost; the sooner the Empire has its consul at work the better. The feast is for those who come first. The road runs from the West to the far East. Its importance is so great that only guesswork or the gift of prophecy can measure it." Such and similar arguments appear in the leading articles of papers whose every effort is being made to push Germany out into the world's markets. Russia's relations with us have been always friendly. Her needs now are, and for a long time will be, such as no nation can or ought to be able to supply better and cheaper than our manufacturers. It might pay us to have a consul in Vladivostok

and agents in every Siberian city. Now that the road is almost built, it is time, as the Germans say, to look the field over carefully. We have a good start; it will be bad management that lets us lose it. Russia resembles our country in very many ways. Siberia's steppes are analogous to our plains, the Urals to our mountains, vast rivers drain its plains, while forests of oak, pine, beech, and birch extend over vast tracts of territory. What we need to work our farms, rivers, forests, orchards, and fields, they need now, or will need. If we give them as good or better than others, as cheap or cheaper, the lion's share of trade must be ours. The warning given here should have a hearing among our merchants and manufacturers.

Tientsin.—Under date of July 23, 1896, Consul Sheridan P. Read, transmits the following description of Tientsin:

Tientsin, in the metropolitan province of Chihli, is situated about 30 miles in a straight line from the mouth of the Peiho River, where there is a small settlement called Taku. The Peiho is a narrow, shallow, muddy river and by its meandering course the distance from Tientsin to its mouth is about 65 miles.

Tientsin is closed to navigation during the months of December, January, and February, on account of the river being frozen over, and frequently during the summer months the Peiho silts up to such an extent that steamers can not reach the foreign settlements.

This condition of affairs, together with the fact that the bar at the mouth of the river can not be crossed by vessels drawing more than 12 feet, necessitating lighterage, has called into operation a corporation known as the Taku Tug and Lighter Company.

Direct shipments from the United States to Tientsin are impracticable, it being in all cases more advantageous to ship to Shanghai or to Hongkong and then transship to the steamers of light draft that ply between these ports and Tientsin.

There are three large steamship lines that practically control this coast trade, *i. e.*, the China Navigation Company, the Indo-China Steam Navigation Company, and the China Merchants' Steam Navigation Company. Besides, there is a monthly service between Kobé, Korean ports, Chefoo, and Tientsin, undertaken by the Nippon Yusen Kaisha (Great Japanese Steamship Company).

The Peiho is only navigable for junks of light draft to Tungchow, which place is 15 miles from Peking, and connected with that city by a canal of five locks. These locks do not admit of the passage of vessels, each short division of the canal having its own cargo boats, which necessitates transshipment of cargo at each lock. All tribute rice, amounting to 1,000,000 piculs (1 picul=133⅓ pounds) annually, passes to Peking via the Peiho and this canal.

The imperial railways of China were begun at Tientsin. One hundred and eighty miles are now in operation from Tientsin to Shanhaikwan, the eastern terminus of the Great Wall, on the Gulf of Pechihli, by way of Tongku, a small village a few miles from the mouth of the Peiho. This road is now in process of extension to Lu Kou Chiao (bridge), 8 miles west from Peking.

Tientsin, by its geographical position, is the point of accumulation and distribution of all merchandise destined for the United States or intended for consumption in the northern provinces of China. The native population is estimated at 900,000. The principal articles of export are bristles, carpets (camel and sheep's wool), curios, feathers, skins (goat, kid, and sheep), and wool (camel, goat, and sheep). The digest of the consular invoice book for the years 1893, 1894, and 1895 shows the value of the trade to the United States in the above-mentioned articles for each of these years to be, respectively, 940,000 taels ($888,000 in gold), 1,752,000 taels ($1,326,000), and 1,819,000 taels ($1,388,000). The gold valuations are ascertained from the quarterly Government rates of exchange. The figures given above do not represent the total annual values of exports from Tientsin to the United States, as a great deal of merchandise eludes this consulate and is certified at Shanghai, Hongkong, and elsewhere. The consular invoice book shows the values of certified invoices for 1873 to be 16,000 taels; hence it can be seen how much the trade has increased in the past twenty-two years, and that the total annual value of exports is still increasing.

Imports are kerosene oil, timber, cotton goods, and sundry stores.

I may say here, in a general way, that the commerce of Tientsin is increasing very rapidly and there is now in and around the foreign concessions marked activity in the construction of new warehouses, private residences, and in public improvements. The new German concession has been inaugurated, by which the water front on the Peiho River will be extended for the mooring of vessels by over a mile. The French, British, and German concessions are just below the native city, on the south bank of the river. The authorities of both the French and British concessions contemplate extending their territories so as to include in their respective jurisdictions the property already built upon and likely to be built upon. Many new firms, mostly German from other Chinese treaty ports, have established themselves here to be participators in the growing trade of this port.

Those who expect to obtain concessions for mining, railroad building, or to secure orders for ships of war, etc., do not overlook Tientsin, as it is almost essential to enlist the viceroy's support before success can be assured. Tientsin is now the most important center as regards railway matters.

It is regrettable that there is no representative American firm, with ample capital at its back, established here, through which a large part of the trade should rightfully pass.

Tientsin, in my opinion, ranks in commercial importance next to Shanghai and Canton, and in political importance next to Peking.

Consular Reports Transmitted to Other Departments.—The following reports from consular officers (originals or copies) were transmitted during the month of September to other Departments for publication or for other action thereon:

Consular officer reporting.	Date.	Subject.	Department to which referred.
Eugene Germain, Zurich.....	July 18, 1896	Exclusion of foreign hogs from Switzerland.	Department of Agriculture.
Do.....	Aug. 1, 1896	Market for agricultural products in Switzerland.	Do.
Edgar Whidden, St. Stephen...	Sept. 4, 1896	Crops.....	Do.
Thomas W. Fox, Plymouth.....	July 6, 1896	Sanitary improvements.....	Marine Hospital Service.
Do.....	.....do.....	Agricultural prospects.....	Department of Agriculture.

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VALUES OF FOREIGN COINS.

The following statements show the valuation of foreign coins, as given by the Director of the United States Mint and published by the Secretary of the Treasury, in compliance with the first section of the act of March 3, 1873, viz: "That the value of foreign coins, as expressed in the money of account of the United States, shall be that of the pure metal of such coin of standard value," and that "the value of the standard coins in circulation of the various nations of the world shall be estimated annually by the Director of the Mint, and be proclaimed on the 1st day of January by the Secretary of the Treasury."

In compliance with the foregoing provisions of law, annual statements were issued by the Treasury Department, beginning with that issued on January 1, 1874, and ending with that issued on January 1, 1890. Since that date, in compliance with the act of October 1, 1890, these valuation statements have been issued quarterly, beginning with the statement issued on January 1, 1891.

These estimates "are to be taken (by customs officers) in computing the value of all foreign merchandise made out in any of said currencies, imported into the United States."

The following statements, running from January 1, 1874, to April 1, 1894, have been prepared to assist in computing the proper values in American money of the trade, prices, values, wages, etc., of and in foreign countries, as given in consular and other reports. The series of years are given so that computations may be made for each year in the proper money values of such year. In hurried computations, the reductions of foreign currencies into American currency, no matter for how many years, are too often made on the bases of latest valuations. When it is taken into account that the ruble of Russia, for instance, has fluctuated from 77.17 cents in 1874 to 37.2 cents in April, 1894, such computations are wholly misleading. All computations of values, trade, wages, prices, etc., of and in the "fluctuating-currency countries" should be made in the values of their currencies in each year up to and including 1890, and in the quarterly valuations thereafter.

To meet typographical requirements, the quotations for the years 1876, 1877, 1879, 1881, and 1882 are omitted, these years being selected as showing the least fluctuations when compared with years immediately preceding and following.

To save unnecessary repetition, the estimates of valuations are divided into three classes, viz: (A) countries with fixed currencies, (B) countries with fluctuating currencies, and (C) quarterly valuations of fluctuating currencies.

A.—*Countries with fixed currencies.*

The following official (United States Treasury) valuations of foreign coins do not include "rates of exchange." It follows, therefore, that when foreign money orders are required, the post-office authorities, to save the Department from incurring loss in such transactions, add the rate of exchange to these valuations.

Countries.	Standard.	Monetary unit.	Value in terms of United States gold.	Coins.
Argentine Republic*	Gold and silver	Peso	$0.96,5	Gold—Argentine ($4.82,4) and ½ Argentine; silver—peso and divisions.
Austria-Hungary†	Gold	Crown	.20,3	Gold—20 crowns ($4.05,2) and 10 crowns.
Belgium	Gold and silver	Franc	.19,3	Gold—10 and 20 franc pieces; silver—5 francs.
Brazil	Gold	Milreis	.54,6	Gold—5, 10, and 20 milreis; silver—½, 1, and 2 milreis.
British North America (except Newfoundland).	do	Dollar	1.00	
Chile‡	Gold and silver	Peso	.91,2	Gold—escudo ($1.82,4), doubloon ($4.56,1), and condor ($9.12,8); silver—peso and divisions.
Cuba	do	do	.92,6	Gold—doubloon ($5 01,7); silver—peso.
Denmark	Gold	Crown	.26,8	Gold—10 and 20 crowns.
Egypt	do	Pound (100 piasters).	4.94,3	Gold—10, 20, 50, and 100 piasters; silver—1, 2, 10, and 20 piasters.
Finland	do	Mark	.19,3	Gold—10 and 20 marks ($1 93 and $3.85,9).
France	Gold and silver	Franc	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Germany	Gold	Mark	.23,8	Gold—5, 10, and 20 marks.
Great Britain	do	Pound sterling	4.86,6½	Gold—sovereign (pound sterling) and half sovereign.
Greece	Gold and silver	Drachma	.19,3	Gold—5, 10, 20, 50, and 100 drachmas; silver—5 drachmas.
Haiti	do	Gourde	.96,5	Silver—gourde.
Italy	do	Lira	.19,3	Gold—5, 10, 20, 50, and 100 lire; silver—5 lire.
Liberia	Gold	Dollar	1.00	
Netherlands§	Gold and silver	Florin	.40,2	Gold—10 florins; silver—½, 1, and 2½ florins.
Newfoundland	Gold	Dollar	1.01,4	Gold—$2 ($2.02,7).
Portugal	Gold	Milreis	1.08	Gold—1, 2, 5, and 10 milreis.
Spain	Gold and silver	Peseta	.19,3	Gold—25 pesetas; silver—5 pesetas.
Sweden and Norway	Gold	Crown	.26,8	Gold—10 and 20 crowns.
Switzerland	Gold and silver	Franc	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Turkey	Gold	Piaster	.04,4	Gold—25, 50, 100, 200, and 500 piasters.
Venezuela	Gold and silver	Bolivar	.19,3	Gold—5, 10, 20, 50, and 100 bolivars; silver—5 bolivars.

* In 1874 and 1875 the gold standard prevailed in the Argentine Republic. Its currency does not appear in the statements again until 1883, when the double standard prevailed, and the peso attained a fixed value of 96.5 cents.

† On reference to the table of "fluctuating currencies," it will be seen that Austria had the silver standard up to and including the quarter ending July 1, 1892. The next quarter (October 1) inaugurated the gold standard (*see* note under table of "fluctuating currencies").

‡ The gold standard prevailed in Chile until January 1, 1890. The value of the peso has been the same under both standards.

§ The Netherlands florin, as will be seen in the "fluctuating" table, became fixed in value (40.2 cents) in 1880.

B.—*Countries with fluctuating currencies, 1874–'90.*

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1874.	1875.	1878.	1880.	1883.	1884.
Austria-Hungary*.	Silver	Florin	$0.47,6	$0.45,3	$0.45,3	$0.41,3	$0.40,1	$0.39,8
Bolivia	do	Dollar until 1880; bolivi-ano there-after.	.96,5	.96,5	.96,5	.83,6	.81,2	.80,6
Central America	do	Peso	.96,5	.91,8	.91,8	.83,6	.....	.....
China	Silver	Haikwan tael	1.61	1.61	.....	.....	.....	.....
Colombia	do	Peso	.96,5	.96,5	.96,5	.83,6	.81,2	.80,6
Ecuador	do	do	.96,5	.91,8	.91,8	.83,6	.81,2	.80,6
Egypt†	Gold	Pound (100 piasters).	.....	.....	4.97,4	4.97,4	4.90	4.90
India	Silver	Rupee	.45,8	.43,6	.43,6	.39,7	.38,6	.38,3
Japan	Gold	Yen	.99,7	.99,7	.99,7	.99,7	.....	.....
	Silver		.....	.....	.....	.....	.87,6	.86,9
Mexico	do	Dollar	1.04,7½	.99,8	.99,8	.90,9	.88,2	.87,5
Netherlands‡	Gold and silver	Florin	.40,5	.38,5	.38,5	.40,2	.....	.....
Peru	Silver	Sol	.92,5	.91,8	.91,8	.83,6	.81,2	.80,6
Russia	do	Ruble	.77,17	.73,4	.73,4	.66,9	.65	.64,5
Tripoli	do	Mahbub of 20 piasters.	.87,09	.82,9	.82,9	.74,8	.73,3	.72,7

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1885.	1886.	1887.	1888.	1889.	1890.
Austria-Hungary*.	Silver	Florin	$0.39,3	$0.37,1	$0.35,9	$0.34,5	$0.33,6	$0.42
Bolivia	do	Dollar until 1880; bolivi-ano there-after.	.79,5	.75,1	.72,7	.69,9	.68	.85
Central America	do	Peso	.....	.....	.....	.69,9	.68	.85
Colombia	do	do	.79,5	.75,1	.72,7	.69,9	.68	.85
Ecuador	do	do	.79,5	.75,1	.72,7	.69,9	.68	.85
Egypt†	Gold	Pound (100 piasters).	4.90	4.90	4.94,3	4.94,3	4.94,3	4.93,3
India	Silver	Rupee	.37,8	.35,7	.34,6	.33,2	.32,3	.40,4
Japan	Gold	Yen	.....	.....	.99,7	.99,7	.99,7	.99,7
	Silver		.85,8	.81	.78,4	.75,3	.73,4	.91,7
Mexico	do	Dollar	.86,4	.81,6	.79	.75,9	.73,9	.92,3
Peru	Silver	Sol	.79,5	.75,1	.72,7	.69,9	.68	.85
Russia	do	Ruble	.63,6	.60,1	.58,2	.55,9	.54,4	.68
Tripoli	do	Mahbub of 20 piasters.	.71,7	.67,7	.65,6	.63	.61,4	.76,7

* The silver standard prevailed in Austria-Hungary up to 1892. The law of August 2 of that year (*see* CONSULAR REPORTS, No. 147, p. 623) established the gold standard.

† The Egyptian pound became fixed in value at $4.94,3 in 1887.

‡ The Netherlands florin fluctuated up to the year 1880, when it became fixed at 40.2 cents.

C.—*Quarterly valuations of fluctuating currencies.*

Countries.	Monetary unit.	1893.				1894.			
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.	April 1.	July 1.	Oct. 1.
Bolivia	Silver boliviano.	$0.61,3	$0.61	$0.60,4	$0.53,1	$0.51,6	$0.46,5	$0.45,7	$0.46,4
Central America	Silver peso	.61,3	.61	.60,4	.53,1	.51,6	.46,5	.45,7	.46,4
China*	Shanghai tael	.90,6	.90,1	.89,2	.78,4	.76,2	.68,6	.67,6	.68,5
	Haikwan tael	1.01	1.00,4	.99,4	.87,4	.84,9	.76,5	.75,3	.76,3
	Tientsin tael								.72,7
	Chefoo tael								.71,7
Colombia	Silver peso	.61,3	.61	.60,4	.53,1	.51,6	.46,5	.45,7	.46,4
Ecuador	do	.61,3	.61	.60,4	.53,1	.51,6	.46,5	.45,7	.46,4
India	Silver rupee	.29,2	.29	.28,7	.25,2	.24,5	.22,1	.21,7	.22
Japan†	Silver yen	.66,1	.65,8	.65,1	.57,3	.55,6	.50,1	.49,3	.50
Mexico	Silver dollar	.66,6	.66,2	.65,6	.57,7	.56	.50,5	.49,7	.50,4
Peru	Silver sol	.61,3	.61	.60,4	.53,1				
Russia‡	Silver ruble	.49,1	.48,8	.48,3	.42,5	.51,6	.46,5	.45,7	.46,4
Tripoli	Silver mahbub	.55,3	.55	.54,5	.47,9	.41,3	.37,2	.36,6	.37,1
Venezuela ⁋	Silver bolivar					.46,5	.41,9	.41,3	.41,8

Countries.	Monetary unit.	1895.				1896.			
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.	April 1.	July 1.	Oct. 1
Bolivia	Silver boliviano	$0.45,5	$0.44,1	$0.48,6	.48,6	$0.49,1	$0.49,3	$0.49,7	$0.49
Central America	Silver peso	.45,5	.44,1	.48,6	.48,6	.49,1	.49,3	.49,7	.49
China*	Amoy tael								.79,3
	Canton tael								.79
	Chefoo tael	.70,4	.68,3	.75,1	.75,2	.75,9	.76,3	.76,9	.75,8
	Chinkiang tael								.77,4
	Fuchau tael								.73,3
	Haikwan tael	.74,9	.75,6	.80	.80,0	.80,8	.81,2	.81,9	.80,6
	Hankow tael								.74,2
	Ningpo tael								.76,2
	Niuchwang tael								.74,3
	Shanghai tael	.67.3	.65,2	.71,8	.71,8	.72,5	.72,9	.73,5	.72,4
	Swatow tael								.73,2
	Takao tael								.79,8
	Tientsin tael	.71,4	.69,2	.76,1	.76,2	.76,9	.77,3	.78	.76,8
Colombia	Silver peso	.45,5	.44,1	.48,6	.48,6	.49,1	.49,3	.49,7	.49
Ecuador	do	.45,5	.44,1	.48,6	.48,6	.49,1	.49,3	.49,7	.49
India	Silver rupee	.21,6	.21,0	.23,1	.23,1	.23,3	.23,4	.23,6	.23,3
Japan†	Silver yen	.49,1	.47,6	.52,4	.52,4	.52,9	.53,2	.53,2	.52,8
Mexico	Silver dollar	.49,5	.47,9	.52,8	.52,8	.53,3	.53,6	.54	.53,2
Persia	Silver kran			.08,9	.09,0	.09	.09,1	.09,2	.09
Peru	Silver sol	.45,5	.44,1	.48,6	.48,6	.49,1	.49,3	.49,7	.49
Russia‡	Silver ruble	.36,4	.35,3	.38,9	.38,9	.39,3	.39,5	.39,8	.39,2
Tripoli	Silver mahbub	.41,1	3.9,8	.43,8	.43,8	.44,3	.44,5	.44,9	.44,2

* China (silver). The Haikwan tael is the customs tael, and the Shanghai tael that used in trade. Consul-General Denny (CONSULAR REPORTS No. 43, p. 516) says: "The value of the tael varies in the different ports of China, and every port has two taels, one being the Government, or Haikwan, tael, in which all duties have to be paid, and the other the market tael."

† Gold is the nominal standard in Japan, but silver is practically the standard. The fixed value of the gold yen is 99.7 cents.

‡ The gold ruble is valued at 77.2 cents. Silver is the nominal standard, but paper is the actual currency, and its depreciation is measured by the gold standard.

⁋ The Venezuelan bolivar became fixed in value (19.3 cents) on January 1, 1893.

FOREIGN WEIGHTS AND MEASURES.

The following table embraces only such weights and measures as are given from time to time in CONSULAR REPORTS and in Commercial Relations:

Foreign weights and measures, with American equivalents.

Denominations.	Where used.	American equivalent.
Almude	Portugal	4.422 gallons.
Ardeb	Egypt	7.6907 bushels.
Are	Metric	0.02471 acre.
Arobe	Paraguay	25 pounds.
Arratel or libra	Portugal	1.011 pounds.
Arroba (dry)	Argentine Republic	25.3175 pounds.
Do.	Brazil	32.38 pounds.
Do.	Cuba	25.3664 pounds.
Do.	Portugal	32.38 pounds.
Do.	Spain	25.36 pounds.
Do.	Venezuela	25.4024 pounds.
Arroba (liquid)	Cuba, Spain, and Venezuela	4.263 gallons.
Arshine	Russia	28 inches.
Arshine (square)	do.	5.44 square feet.
Artel	Morocco	1.12 pounds.
Baril	Argentine Republic and Mexico	20.0787 gallons.
Barrel	Malta (customs)	11.4 gallons.
Do.	Spain (raisins)	100 pounds.
Berkovet	Russia	361.12 pounds.
Bongkal	India	832 grains.
Bouw	Sumatra	7,096 5 square meters.
Bu	Japan	0.1 inch.
Butt (wine)	Spain	140 gallons.
Caffiso	Malta	5.4 gallons.
Candy	India (Bombay)	529 pounds.
Do.	India (Madras)	500 pounds.
Cantar	Morocco	113 pounds.
Do.	Syria (Damascus)	575 pounds.
Do.	Turkey	124.7036 pounds.
Cantaro (Cantar)	Malta	175 pounds.
Carga	Mexico and Salvador	300 pounds.
Catty	China	1.333⅓ (1⅓) pounds.
Do.	Japan	1.31 pounds.
Do.	Java, Siam, Malacca	1.35 pounds.
Do.	Sumatra	2.12 pounds.
Centaro	Central America	4.2631 gallons.
Centner	Bremen and Brunswick	117.5 pounds.
Do.	Darmstadt	110 24 pounds.
Do.	Denmark and Norway	110.11 pounds.
Do.	Nuremberg	112.43 pounds.
Do.	Prussia	113.44 pounds.
Do.	Sweden	93.7 pounds.
Do.	Vienna	123.5 pounds.
Do.	Zollverein	110.24 pounds.
Do.	Double or metric	220.46 pounds.
Chih	China	14 inches.
Coyan	Sarawak	3,098 pounds.
Do.	Siam (Koyan)	2,667 pounds.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalent.
Cuadra	Argentine Republic	4 2 acres.
Do	Paraguay	78.9 yards.
Do	Paraguay (square)	8.077 square feet.
Do	Uruguay	Nearly 2 acres.
Cubic meter	Metric	35.3 cubic feet.
Cwt. (hundredweight)	British	112 pounds.
Dessiatine	Russia	2 6997 acres.
Do	Spain	1.599 bushels.
Drachme	Greece	Half ounce.
Dun	Japan	1 inch.
Egyptian weights and measures	(*See* CONSULAR REPORTS No. 144.)	
Fanega (dry)	Central America	1.5745 bushels.
Do	Chile	2.575 bushels.
Do	Cuba	1.599 bushels.
Do	Mexico	1.54728 bushels.
Do	Morocco	Strike fanega, 70 lbs., full fanega, 118 lbs.
Do	Uruguay (double)	7.776 bushels.
Do	Uruguay (singie)	3.888 bushels.
Do	Venezuela	1.599 bushels.
Fanega (liquid)	Spain	16 gallons.
Feddan	Egypt	1.03 acres.
Frail (raisins)	Spain	50 pounds.
Frasco	Argentine Republic	2.5096 quarts.
Do	Mexico	2.5 quarts.
Fuder	Luxemburg	264.17 gallons.
Garnice	Russian Poland	0.88 gallon.
Gram	Metric	15 432 grains.
Hectare	do.	2.471 acres.
Hectoliter:		
Dry	do.	2.838 bushels.
Liquid	do.	26.417 gallons.
Joch	Austria-Hungary	1.422 acres.
Ken	Japan	4 yards.
Kilogram (kilo)	Metric	2.2046 pounds.
Kilometer	do.	0.621376 mile.
Klafter	Russia	216 cubic feet.
Kota	Japan	5.13 bushels.
Korree	Russia	3 5 bushels.
Last	Belgium and Holland	85.134 bushels.
Do	England (dry malt)	82.52 bushels.
Do	Germany	2 metric tons (4,480 pounds).
Do	Prussia	112.29 bushels.
Do	Russian Poland	11⅜ bushels.
Do	Spain (salt)	4,760 pounds.
League (land)	Paraguay	4,633 acres.
Li	China	2,115 feet.
Libra (pound)	Castilian	7,100 grains (troy).
Do	Argentine Republic	1.0127 pounds.
Do	Central America	1 043 pounds.
Do	Chile	1.014 pounds.
Do	Cuba	1.0161 pounds.
Do	Mexico	1.01465 pounds.
Do	Peru	1.0143 pounds.
Do	Portugal	1.011 pounds.
Do	Uruguay	1.0143 pounds.
Do	Venezuela	1.0161 pounds.
Liter	Metric	1.0567 quarts.
Livre (pound)	Greece	1.1 pounds.
Do	Guiana	1.0791 pounds.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalent.
Load	England (timber)	Square, 50 cubic feet; unhewn, 40 cubic feet; inch planks, 600 superficial feet.
Manzana	Costa Rica	1⅞ acres.
Marc	Bolivia	0.507 pound.
Maund	India	82⅔ pounds.
Meter	Metric	39.37 inches.
Mil	Denmark	4.68 miles
Do	Denmark (geographical)	4.61 miles.
Morgen	Prussia	0.63 acre.
Oke	Egypt	2.7225 pounds.
Do	Greece	2.84 pounds.
Do	Hungary	3.0817 pounds.
Do	Turkey	2.85418 pounds.
Do	Hungary and Wallachia	2.5 pints.
Pic	Egypt	21¼ inches.
Picul	Borneo and Celebes	135.64 pounds.
Do	China, Japan, and Sumatra	133⅓ pounds.
Do	Java	135.1 pounds.
Do	Philippine Islands (hemp)	139.45 pounds.
Do	Philippine Islands (sugar)	140 pounds.
Pie	Argentine Republic	0.9478 foot.
Do	Castillan	0.91407 foot.
Pik	Turkey	27.9 inches.
Pood	Russia	36.112 pounds.
Pund (pound)	Denmark and Sweden	1.102 pounds.
Quarter	Great Britain	8.252 bushels.
Do	London (coal)	36 bushels.
Quintal	Argentine Republic	101.42 pounds.
Do	Brazil	130.06 pounds.
Do	Castile, Chile, Mexico, and Peru	101.61 pounds.
Do	Greece	123.2 pounds.
Do	Newfoundland (fish)	112 pounds.
Do	Paraguay	100 pounds.
Do	Syria	125 pounds.
Do	Metric	220.46 pounds.
Rottle	Palestine	6 pounds.
Do	Syria	5¼ pounds.
Sagen	Russia	7 feet.
Salm	Malta	490 pounds.
Se	Japan	3.6 feet.
Seer	India	1 pound 13 ounces.
Shaku	Japan	10 inches.
Sho	do	1.6 quarts.
Standard (St. Petersburg)	Lumber measure	165 cubic feet.
Stone	British	14 pounds.
Suerte	Uruguay	2,700 cuadras (*see* cuadra).
Tael	Cochin China	590.75 grains (troy).
Tan	Japan	0.25 acre.
To	do	2 pecks.
Ton	Space measure	40 cubic feet.
Tonde (cereals)	Denmark	3.94783 bushels.
Tondeland	do	1.36 acres.
Tsubo	Japan	6 feet square.
Tsun	China	1.41 inches.
Tunna	Sweden	4.5 bushels.
Tunnland	do	1.22 acres.
Vara	Argentine Republic	34.1208 inches.
Do	Castile	0.914117 yard.
Do	Central America	38.874 inches.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalent.
Vara	Chile and Peru	33.367 inches.
Do	Cuba	33.384 inches.
Do	Curaçao	33.375 inches.
Do	Mexico	33 inches.
Do	Paraguay	34 inches.
Do	Venezuela	33.384 inches.
Vedro	Russia	2.707 gallons.
Vergees	Isle of Jersey	71.1 square rods.
Verst	Russia	0.663 mile.
Vlocka	Russian Poland	41.98 acres.

METRIC WEIGHTS AND MEASURES.

Metric weights.

Milligram ($\frac{1}{1000}$ gram) equals 0.0154 grain.
Centigram($\frac{1}{100}$ gram) equals 0.1543 grain.
Decigram ($\frac{1}{10}$ gram) equals 1.5432 grains.
Gram equals 15.432 grains.
Decagram (10 grams) equals 0.3527 ounce.
Hectogram (100 grams) equals 3.5274 ounces.
Kilogram (1,000 grams) equals 2.2046 pounds.
Myriagram (10,000 grams) equals 22.046 pounds.
Quintal (100,000 grams) equals 220.46 pounds.
Millier or tonnea—ton (1,000,000 grams) equals 2,204.6 pounds.

Metric dry measure.

Milliliter ($\frac{1}{1000}$ liter) equals 0.061 cubic inch.
Centiliter ($\frac{1}{100}$ liter) equals 0.6102 cubic inch.
Deciliter ($\frac{1}{10}$ liter) equals 6.1022 cubic inches.
Liter equals 0.908 quart.
Decaliter (10 liters) equals 9.08 quarts.
Hectoliter (100 liters) equals 2.838 bushels.
Kiloliter (1,000 liters) equals 1.308 cubic yards.

Metric liquid measure.

Milliliter ($\frac{1}{1000}$ liter) equals 0.0388 fluid ounce.
Centiliter ($\frac{1}{100}$ liter) equals 0.338 fluid ounce.
Deciliter ($\frac{1}{10}$ liter) equals 0.845 gill.
Liter equals 1.0567 quarts.
Decaliter (10 liters) equals 2.6418 gallons.
Hectoliter (100 liters) equals 26.418 gallons.
Kiloliter (100 liters) equals 264.18 gallons.

Metric measures of length.

Millimeter. ($\frac{1}{1000}$ meter) equals 0.0394 inch.
Centimeter ($\frac{1}{100}$ meter) equals 0.3937 inch.
Decimeter ($\frac{1}{10}$ meter) equals 3.937 inches.
Meter equals 39.37 inches.
Decameter (10 meters) equals 393.7 inches.
Hectometer (100 meters) equals 328 feet 1 inch.
Kilometer (1,000 meters) equals 0.62137 mile (3,280 feet 10 inches).
Myriameter (10,000 meters) equals 6.2137 miles.

Metric surface measures.

Centare (1 square meter) equals 1,550 square inches.
Are (100 square meters) equals 119.6 square yards.
Hectare (10,000 square meters) equals 2.471 acres.

CONSULAR REPORTS.

COMMERCE, MANUFACTURES, ETC.

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HIDES AND LEATHER IN EUROPE.

In a circular sent to the consular officers by the Department of State, their attention was directed to the fact that a firm of leading tanners in the West had addressed the Department, through a member of the House of Representatives, as follows:

For several months we have noticed, in the leather-trade papers, clippings taken from the European exchanges in reference to the great advances made on hides and leather in the Old World. Large advances have also been made in the United States; but of late there has been some reduction in prices in both hides and leather, and, inasmuch as the United States are doing a heavy export in hides and leather, it is important to the industry to have the consuls investigate fully as to the stocks of hides and leather in the several countries of Europe, for upon this depends very largely the future export trade of the United States.

To cover the information desired, the consular officers were instructed to ascertain the stock of hides on hand, how much of this is foreign and whence this portion is received, and how much is home product; the stock of leather on hand, how much thereof is exported and whither exported. Also, any information as to the consumption of American leather, and how to increase the same in the consular district.

The following reports have been received in answer to the instruction.

AUSTRIA-HUNGARY.

PRAGUE.

The stock of hides on hand in Bohemia is inconsiderable and consists chiefly of those produced in this country. The hides are in the hands of tanners, only a small part being held by dealers.

In the year 1895, the import of hides from America was small. Some hides have been imported from Germany and Switzerland and also an unimportant quantity from France. In former years, the annual import from America into this country amounted to from 80,000 to 100,000 hides, the majority coming from South America, the balance from the United States.

The stock of leather is not very large, because the prices are still too high and the apprehension of a sudden downfall of the prices keeps dealers from buying. Leather, chiefly goat and sheep, is exported from this country to the Orient and Sweden and Norway.

American leather—hemlock, bellies, and partly black and brown upper leather—has been imported into this district in very small quantities during recent years. What American leather has been used came by way of England, through English and German agents. The reason for this poor business, I am told by merchants, is caused by the prevalent terms of sale in the United States, which, being cash on receipt of the bill of lading, hamper business transactions with this country. Through lower prices and easier terms, and perhaps by the establishment of agencies furnished with samples, the consumption of American leather could be advantageously and speedily increased.

There are no available statistics on the leather trade in Bohemia.

CARL BAILEY HURST,

PRAGUE, *February 29, 1896.** *Consul.*

BELGIUM.

BRUSSELS.

The few tanneries now in operation in Brussels and its environs carry very little, if any, stock of raw hides. According to requirements of orders, the Brussels tanneries buy hides coming from the United States and South America at Antwerp and domestic hides from the Brussels slaughterhouse. The Argentine Republic and Uruguay furnish the greater proportion of foreign hides, which are usually imported for the manufacture of sole leather. A few small tanneries, principally situated near Namur, annually employ from 500 to 600 domestic hides for sole leather. The annual consumption of foreign hides in this consular district averages about 20,000.

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*GLOVE INDUSTRY OF AUSTRIA-HUNGARY.—Consul Hammond, of Budapest, under date of January 17, 1896, transmitted a brief report upon the glove industry of Austria-Hungary, which is printed herewith as bearing upon the subject of European markets for hides and leather: "The Hungarian glove industry has not yet reached a high point; otherwise it were not possible for Hungary to spend for the import of gloves millions of florins a year. In the year 1894, Hungary paid for the importation of leather for gloves and leather gloves about 2,000,000 florins ($804,000)—a sum large enough to meet the demands of the home market, if expended in their manufacture. The raw materials, such as sheep, lamb, goat, and kid skins, etc., are sufficient for their manufacture here, and what more might be needed could be obtained from the neighboring Balkan states. For the tanning and coloring of the skins, much would have to be done. Austria has received in the nine months January to September, inclusive, 1895, not less than 16,000,000 to 17,000,000 florins ($6,432,000 to $6,834,000) from the exportation of leather gloves."

The present stock of hides in the several towns embraced in this consular district is as follows:

Towns.	Domestic and foreign hides.	Domestic hides.
Dinant	15,000	.....
Nismes	4,000	.....
Sombreffe	2,000	.....
Beauraing	.....	4,000
Fosses	.....	4,000
Surice	.....	3,000
Andenne	.....	3,000
Gembloux	.....	1,000
Franière	.....	1,000
Bioul	.....	1,000

On account of the high price demanded, and also on account of the red color, only a very small quantity of sole leather from the United States is consumed in this city. It is employed only in case of scarcity or increase in price of domestic sole leather, which usually sells at a very low figure.

The total stock of leather on hand in this city is estimated at about 1,000,000 francs ($193,000).

Mr. Van Begin, vice-president of the Leather Exchange at Brussels, to whom I am indebted for much of the data contained herein, says that "there can be no increase in the consumption without the extension of the tanneries, which at present seems improbable, or by the reduction of prices of raw hides."

Annexed hereto is a statement showing the importation and exportation of raw hides, skins, leather, etc., to and from Belgium for the years 1894 and 1895.

Imports into Belgium of raw hides and skins for the years 1894 and 1895.

Imported from—	1894.	1895.	Increase.	Decrease.
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*
Argentine Republic	47,582,778	24,340,609	.....	23,242,169
Australia	927,513	2,795,118	1,867,605	.....
Brazil	4,197,094	4,769,970	572,876	.....
England	11,665,207	12,775,899	1,110,692	.....
France	16,454,167	17,397,237	943,070	.....
Germany	4,665,058	2,657,694	.....	2,007,364
Holland	5,979,666	6,679,787	700,121	.....
Indies	38,025	133,133	95,108	.....
Russia	20,750	525,246	504,496	.....
Switzerland	225,791	563,631	337,840	.....
United States	2,614,190	2,169,847	.....	444,343
Uruguay	17,386,200	19,173,638	1,787,438	.....
Other countries	3,104,607	2,743,752	.....	360,855
Total	114,861,046	96,725,561	7,919,246	26,054,731

Exports from Belgium of raw hides and skins for the years 1894 and 1895.

Exported to—	1894.	1895.	Increase.	Decrease.
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*
England	13,232,509	12,540,473	.....	692,036
France	7,141,992	7,915,140	773,148	.....
Germany	44,165,070	31,755,011	.....	12,410,059
Grand Duchy of Luxemburg	2,174,993	1,862,925	.....	312,068
Greece	3,299,833	2,097,207	.....	1,202,626
Holland	5,071,488	5,617,423	545,935	.....
Italy	1,184,055	1,591,110	407,055	.....
Norway and Sweden	1,292,440	928,026	.....	364,414
Roumania	923,021	56,252	.....	866,769
Russia	2,536,774	1,652,251	.....	884,523
United States	3,824,053	6,948,961	3,124,908	.....
Turkey	1,373,291	661,894	.....	711,397
Other countries	2,441,592	2,821,280	379,688	.....
Total	88,661,111	76,447,953	5,230,734	17,443,892

Imports into and exports from Belgium of skins, colored, tanned, prepared, etc. (leather), including peltry prepared, for the years 1894 and 1895.

Country.	Imports.			Exports.			
	1894.	1895.	Increase.	1894.	1895.	Increase.	Decrease.
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
England	903,472	1,288,054	384,582	764,603	1,427,985	663,382	.....
France	1,440,648	1,661,332	220,684	1,447,118	2,192,073	744,955	.....
Germany	596,625	824,366	227,741	2,121,757	1,909,908	.....	211,849
Holland	147,237	149,741	2,504	717,191	691,533	.....	25,658
Italy	.....	.....	.....	193,754	127,173	.....	66,581
Russia	.....	.....	.....	131,560	134,299	2,739	.....
Switzerland	.....	.....	.....	440,053	461,109	21,056	.....
United States	112,268	119,110	6,842	222,735	293,460	70,725	.....
Turkey	.....	.....	.....	440,031	68,664	.....	371,367
Other countries	18,119	46,070	27,951	576,332	370,427	.....	205,905
Total	3,218,369	4,088,673	870,304	7,055,134	7,676,631	1,502,857	881,360

GEO. W. ROOSEVELT,
Consul.

BRUSSELS, *February 20, 1896.*

GHENT.

Tanning of hides and the manufacture of leather constitute an important industry in Belgium, considerably on the increase during the past five years. The principal tanneries of foreign hides for sole leather are located at Stavelot and other towns in the province of Luxemburg and in the cities of Liege and Namur. The chief establishments for ox and cow hides for uppers and soles are situated at Rorgnies, Tournai, Quatrecht, and Peruwelz.

The tannery at Quatrecht (Société Anonyme de Quatrecht) is the only considerable establishment of its kind located in this consular district. Others which may be mentioned are: R. Waterloos, 49 Impasse de la Coupure, Ghent; E. Krické, 29 Rue aux Laines, Ghent; L. Vandewalle, 27–28 Boulevard de l'Harnisse, Ghent; Chas. Verheggen, 66 Chaussée d'Anvers, Mt. St. Amand (near Ghent); Cockhuyt, 7 Rue du Chantier, Ghent; J. Coppens, 35 Klekkenhock, Ghent; E. Van Heude, 21 Rue des Tanneurs, Ghent; Lebegge, Quatrecht.

The principal leather merchants, all located in Ghent, are: A. Carpentier, 24 Boulevard Lousbergs; J. Lybaert, 3 Rue de la Crapaudiere; B. & A. Megroot, 18 Quai Porte aux Vaches; and L. Bogaert, 45 Rue des Espagnols.

Hides.—It is regrettable that diligent search has not enabled me to secure satisfactory information on the condition of the hide and leather market in this district. Statistics of imports only exist for Belgium as an entirety; from them it is not possible to judge what proportion of the various hides or leathers come to Ghent and vicinity. Furthermore, the persons engaged in the business are excessively noncommunicative, evidently fearing that information given by them might assist their United States competitors. In this respect, I can only confirm what one of my predecessors wrote on the same subject eleven years ago, under date of June 12, 1885.

Failing, therefore, to ascertain details as especially applicable to this consular district, efforts have been made to determine the state of the hide and leather market throughout Belgium; in this regard, there has been more success.

Through the kindness of Mr. August Haeken, president of the Hide and Leather Exchange at Liege, I have been furnished with a copy of this gentleman's annual report on the trade during 1895. The translation, so far as regards the present subject-matter, is hereto annexed.

From the published organ of the exchange, there is likewise drawn the translation of the trade report of Messrs. G. & E. Grisar, brokers at Antwerp.

It seems entirely unnecessary to repeat what is found so well expressed in these two documents. Tables are also hereto annexed showing the amount and value of raw hides and leathers imported and exported. From the latter, it appears that the Argentine Republic is the chief source of supply for hides; Uruguay also sends a considerable amount. The trade of the United States is very small.

Of tanned and worked leathers imported, France supplies the largest proportion, while the figures for the United States again are insignificant. Comments on the export trade would be superfluous.

The duties on hides and leathers are: Raw hides, free; goat and sheep skins (hard tawed) and kid (hard tawed), free; tanned and curried leathers, $2.90 per 220 pounds; glove leathers, $1.93 per 220 pounds; manufactured leather goods, 15 per cent.

Native Belgian hides supply about one-half of the demand. They are quoted at prices varying from 5 to 10 cents per pound. Hides coming from the United States are said to generally sell higher than others. The prices, however, are justified by their superior quality and size. The extent of our trade in Belgium, it is generally conceded, is entirely dependent upon the quality and the price of the goods offered.

Shoe leathers.—It is impossible to state the amount of leather annually produced in Belgium. The tanning industry, however, is, as I have stated, very important. Considerable leather is likewise imported; very little, nevertheless, comes from the United States. Calf and kid leathers, waxed, tawed, and varnished, are chiefly brought from France. The demand for leather is, just at present, very active. The largest consumption is in polished cowhides.

So far as I can learn, there is no inherent obstacle to the increase of our trade. The question of different color imparted to our leathers by our method of tanning has come to my attention, but, after due investigation, I am prepared to state that there is not, on that account, any general prejudice existing. Owing, however, to usage and custom, the demand for shoe leathers in Belgium is limited as compared with our own country. The general use of wooden shoes by the poorer classes and the apparent indifference to the quality of shoes, even when worn, militate against the increase of this trade.

Wooden shoes are worn by almost all the working classes, mechanics, factory hands, day and farm laborers. Men, women, and school children wear the wooden "sabots" without exception. A safe estimate of the number of persons in Belgium wearing leather shoes would be not to exceed 15 per cent; the other 85 per cent incase their feet in wood. We, therefore, have, of a total population of 6,400,000, only about 960,000 who demand leather for their foot gear; and of this latter number, 80 per cent, or about 768,000 people, wear only the coarsest qualities, leaving 20 per cent, or not to exceed, say, 200,000, who require the medium and finer grades of shoe leathers. These estimates, to my mind, present a palpable reason why there is not a more extensive market in this country. There exists in Belgium, so far as I am informed, only one factory where leather shoes are partially manufactured by machinery. The possibility of a market for wooden shoes made by American machinery might present itself.

Glove leathers.—The glove leathers employed are chiefly sheep, lamb, and kid skins. They come mostly from Germany and France. The principal place of purchase is at the Leipsic fair. They are imported generally "in the white." The duty is 8 per cent. The tanning is done at Brussels. Within the past two years, the prices of these articles have increased approximately 30 per cent. The present quotations of skins (in the white, without payment of duty) are, per dozen: Kidskins, $7; lambskins, $8.50; sheep and roe skins, $6.

Leather belting.—Belgium demands large supplies of belting for its numer-

ous manufacturing establishments. Considerable quantities are manufactured in the country. Still, as I am informed, a large proportion is imported from England. It would seem that the United States might, by proper introduction, secure a share of this trade.

Acknowledgements.—In addition to Mr. August Haeken and the Journal of the Hide and Leather Exchange, my thanks are also due to Messrs. P. Zenner and De Moli, of this city, and Henry Lemaire and Courtant & Heinen Company, of Tournai, for information obtained from them in the preparation of this report.

HENRY C. MORRIS,

GHENT, *February 28, 1896.* *Consul.*

TRANSLATION OF A PORTION OF THE ADDRESS OF PRESIDENT AUGUST HAEKEN AT THE ANNUAL MEETING OF THE BELGIAN HIDE AND LEATHER EXCHANGE, AT LIEGE, DECEMBER 5, 1895.

In our last year's report we noticed the unfavorable condition of tanned leather; since then, what a change in our industry and what a rise in the prices of leathers and hides! The great demand in the United States has caused a corner in hides, and, as a result, quotations of cured and dried exotic hides have risen extraordinarily. Native hides, as the result of numerous American purchases, early followed the upward movement and have likewise attained excessive prices.

The situation becoming critical for the tanning industry, the tanners of Tournai and Stavelot held a meeting to consider the means of advancing the prices of tanned leathers. A marked increase in price resulted. The meeting of the Stavelot tanners, in which the principal leather merchants of the country took part, caused an immediate rise in sole leathers. It was the same at Tournai, where the tanners had likewise decreed an increase in the price of polished cow leathers. Since that moment customers have accepted the increase and demands have never ceased to be plenty, even on a rising market. Let us note, in passing, that the first tendency toward an increase occurred in Belgium. France, England, and Germany only followed our example, but with such vigor that their prices soon exceeded those asked in this country.

No one would have imagined that such a sudden and important increase in the price of tanned leathers could have been maintained, everyone attributing to artificial causes that which, however, is explained by natural events. Let us hasten to add that even if this increase was to be foreseen, it was difficult, if not impossible, to predict its importance.

Let us now examine what were the reasons for this appreciation in the price of hides and the manufactured article. The advance in the price resulted from the small number of animals slaughtered in 1894, especially in the United States. In 1893, many cattle were slaughtered for want of fodder. The number was thus considerably reduced. This enormous quantity of hides thrown upon the market brought a decrease in the prices of raw material. The output of the tanneries largely exceeded the consumption. This overproduction caused such a depression in the prices of the manufactured article as tanners had never previously known.

According to official figures, there was in 1894 a decrease throughout the world in the numbers of cattle. In the United States, the decrease was 2,226,723 head; in France, 1,209,793 head; and in Great Britain, 426,758 head. In order to replace this stock, breeding had to be done on a large scale, for which the abundance of fodder was favorable. The number of cattle slaughtered was also much reduced. A scarcity of hides was the consequence, which occasioned at the end of the year 1894 a slight advance in prices. As a result of large purchases on the part of the United States, this advance assumed enormous proportions in May

and June, 1895. Our tanners resisted the increase and diminished, to a great extent, after the winter of 1894, their output. The sale of leathers was ordinary and moderate at unremunerative prices. As the result of these conditions and of this limited output, we found ourselves this year face to face with, not indeed a scarcity of tanned leather, but rather with a limited stock on hand. This fact, in connection with the excessive price of hides, caused a rise in the manufactured article. We had, on one hand, the scarcity of leather in stock, and on the other, the impossibility of restocking on account of the excessive prices of raw material. It is proper, however, to add that speculation, which in the present day has affected so many other interests, has not in this trade remained entirely inoperative. There is reason to believe that this market, ordinarily so seldom disturbed, may, in the future, be at the mercy of the action of our important American colleagues. Our tanners, in the interest of their industry, will do well to keep an eye constantly open to the acts and doings of the powerful American trust and to watch with attention the condition of the market on the other side of the ocean.

In spite of the tranquil market which we at present enjoy, we believe that leather is bound to maintain relatively high prices. The advance in hides and the notable reduction in the number of hides tanned tend to this result.

The tanning industry must and can easily maintain a portion of the advantages acquired by not consenting to any unjustified concessions, after the manner of the corporation of German tanners—manufacturing especially horsehides—nor in imitation of the Stavelot tanners of coarse leathers. Tanners have, in our opinion, acted wisely in reducing their output.

A wise and not excessive production and conservatism in sales will render prices firmer. We shall, as a result, after so many years of misfortune, continue to enjoy a more prosperous period in the tanning industry, which, if prolonged, will afford a fair and just profit on the capital invested.

ANNUAL REVIEW BY G. & E. GRISAR.

The period which is closing has been marked by considerable fluctuation in prices. The scantiness of stocks on hand in European markets provoked, during the first months of the year, a continuous advance, further accentuated in the spring; during the summer, it assumed proportions unknown to the trade for nearly twenty years. In the month of August, prices attained their highest point, reaching the quotations of 1875–76, not however, equaling those of 1874. This brisk upward movement in prices is explained by the fact that, during the two last years, there has been an abundance of fodder, consequently the slaughter of native cattle has been considerably reduced. The same condition existed in Europe and in the United States, contrary to that which happened in 1892–93. The scarcity of fodder that season had caused excessive slaughtering and consequent decrease in the price of leather. This circumstance, added to the smallness of the stocks of exotic merchandise on hand, created a veritable leather famine, which was especially felt in the United States. The American trust also absorbed nearly all the exotic and native leathers which it could find in the various markets of the world, thus causing an enormous increase in price, amounting, in the month of August, to 75 to 85 per cent for oxen cured light, 40 to 50 per cent for oxen cured heavy, 110 to 120 per cent for cows cured light, 80 to 90 per cent for cows cured heavy. During this period, leather, likewise, advanced, although in a less degree. It is true that the upward movement in the price of this article was checked in a great measure by the exceptional dryness of the autumn, which reduced the consumption. From this time forward, the sale of leather was considerably lessened. Tanneries ceased to produce, and there resulted a complete and persistent stagnation. The sales in our market during the last quarter of the current year thus amounted to only 148,350 hides, against 478,000 during the corresponding period of 1894. In December, however, the demand revived, thanks to the concession of opportune prices, and we are finishing the year with a good current business. Here is a comparison of quotations at the end of December.

Brand.	Weight.	Price per 100 pounds.		Increase.
		End of 1894.	End of 1895.	
	Pounds.			
Saladeros summer Buenos Ayres oxen	44 to 55	$7.00 to $7.70	$10.50 to $11.20	$1.50
Do	55 to 70½	9.44 to 10.32	11.70 to 12.56	$2.24 to 2.26
Do	70½ to 88	8.92 to 9.62	10.50 to 11.04	1.42 to 1.58
Saladeros summer Uruguay oxen	44 to 55	7.36 to 8.04	11.02 to 11.70	3.66
Do	55 to 70½	10.32 to 11.20	12.20 to 13.06	1.86 to 1.88
Do	70½ to 88	10.16 to 11.04	11.20 to 11.88	.84 to 1.04
Saladeros summer Buenos Ayres cows	30¾ to 40	5.70 to 6.12	9.60 to 10.16	3.84 to 4.04
Saladeros summer Buenos Ayres oxen	44 to 55	6.84 to 7.52	10.16 to 11.04	3.22 to 3.52
Saladeros summer Uruguay cows	30¾ to 44	5.76 to 6.12	9.62 to 10.16	3.86 to 4.04
Do	44 to 55	7.70 to 8.60	11.36 to 12.20	3.60 to 3.66

The quality of saladeros hides received in 1895 was very satisfactory in regard to strength and skin. The same. unfortunately, is not true of the curing, which, in many cases, was incomplete, most of the lots received turning red immediately upon arrival in the warehouses. The section of hides of the Chamber of Commerce of Antwerp was astonished at this state of affairs and has just officially brought the fact to the attention of the syndical chamber of Buenos Ayres, so that in the future more attention may be given to the curing of hides, as well as to their storage both in the ships and on the quays.

The mataderos hides of Buenos Ayres have lost considerable clientage during several years past because of their defective quality; we have received relatively very few lots of them in 1895. On the contrary, the mataderos of Montevideo were largely imported and continue to be very much appreciated by purchasers.

SALES FOR FUTURE DELIVERY.

Thanks to the great demand which existed during the summer, orders for future delivery attained this year an extraordinary figure; that is to say, 406,516 hides, as against 68,195 in 1894. They were as follows:

Uruguay saladeros:	
Oxen	185,086
Cows	91,389
Buenos Ayres saladeros:	
Oxen	20,320
Cows	3,499
Montevideo saladeros:	
Oxen	3,825
Cows	5,014
Gualequay saladeros:	
Oxen	8,437
Cows	994
Cuareim saladeros oxen	13,031
Buenos Ayres mataderos oxen	1,000
Montevideo mataderos and saladeros cows	11,150
Rosario mataderos and saladeros cows	647
Rio Grande:	
Salted oxen	13,558
Saladeros cows	14,930
Rio de Janeiro salted oxen	17,687
Australian salted	14,949
Rio Grande salted	1,000

AUCTION.

During this year, we have only had one auction, at which, of 88,000 hides offered, 33,000 were sold.

DRY LA PLATA HIDES.

The importation in 1895 amounted to only 88,200 hides, as compared with 110,400 in 1894 and 183,000 in 1893. Dried La Plata hides followed the same movement as cured hides and the increase in the summer amounted to 70 to 80 per cent for oxen and even as much as 110 per cent for campos cows. These latter were sought for exportation. From August forward, there was, so to speak, no demand; only a few transactions were concluded at very variable prices. The year closed with a feeble upward tendency. The prices which we quote must therefore be considered as entirely nominal:

Brand.	Weight.	Price per 100 pounds.		Increase.
		End of 1894.	End of 1895.	
Mataderos:	*Pounds.*			
Oxen	28½ to 33	$12.74 to $14.00	$19.78 to $21.00	$7.00 to $7.04
Cows	22 to 24	10.50 to 11.20	18.56 to 19.24	8.06 to 8.14
Campos:				
Oxen	26 to 33	10.16 to 12.56	17.00 to 19.24	6.68 to 6.84
Cows	19½ to 22	8.42	14.90 to 17.50	6.48 to 11.70

AUSTRALIAN CURED HIDES.

The importation of this article increased wonderfully in 1895 and amounted to 46,177 hides, as against 10,362 in 1894. We are pleased to observe that these hides have always found a ready sale at the full level of quotations ruling in London.

CUTTINGS.

Importations this year amounted to 2,570 bales, as against 2,708 bales in 1894 and 2,030 bales in 1893. The sales include 3,220 bales, as compared with 1,829 bales in 1894 and 2,422 bales in 1893. There is nothing special to be said about this article except that it acquired an increased value. This may be seen from the following comparative quotations per 100 pounds:

Articles.	End of 1894.	End of 1895.	Increase.
Shanks and tendons	$2.80 to $3.70	$3.34 to $4.22	$0.52 to $0.54
Oxen hoofs	1.76 to 2.38	2.46 to 3.16	.70 to .78
Pieces of skin	1.40 to 2.46	2.46 to 3.52	1.06
Tails	1.58 to 1.76	2.10 to 2.46	.52 to .70
Ears and noses	1.40 to 1.58	1.76 to 2.10	.36 to .52
Cuttings in lime	1.94 to 2.80	2.64 to 3.52	.70 to .70

HORNS.

Importations of the year, 1,720,000 (Rio Grande, 27,000; Uruguay and Montevideo, 959,000; Buenos Ayres, 684,000; miscellaneous, 50,000), against 2,306,000 in 1894 and 1,744,000 in 1893. The total sales amounted to 1,685,000 horns, compared with 2,192,000

in 1894 and 1,744,000 in 1893. This article has found an easy sale during most of the year and prices closed considerably above those quoted last year. We quote:

Brand.	Weight.	Price per 100 pairs.		Increase.
		End of 1894.	End of 1895.	
	Pounds			
Rio Grande	110 to 132	$9.46 to $11.39	$10.42 to $12.35	$0.96 to $1.93
Uruguay	88 to 121	8.11 to 10.42	9.07 to 11.39	.96 to .97
Buenos Ayres oxen	77 to 99	5.40 to 6.37	6.56 to 7.53	1.16
La Plata	52½ to 79	3.47 to 4.63	3.47 to 5.21	.58

Comparative table of general movement of hides (first hand) on the Antwerp market in 1894 (calves and kips not included).

Description.	La Plata.		Rio Grande.		Brazil.	United States and miscellaneous.	Horses.	Total.
	Dry.	Cured.	Dry.	Cured.				
Importation in 1895	88,179	1,046,131	2,004	53,040	45,376	75,512	1,028	1,311,270
Importation in 1894	110,398	1,214,735	640	50,210	24,335	40,493	955	1,441,766
Increase	.....	.....	1,364	2,830	21,041	35,019	73	.....
Decrease	22,219	168,604	.....	.....	.....	.....	.....	130,496
Sales in 1895	85,725	783,702	218	22,338	38,966	58,403	356	989,708
Sales in 1894	163,627	1,102,284	640	45,171	13,721	53,220	6,391	1,385,054
Increase	.....	.....	.....	.....	25,245	5,183	.....	.....
Decrease	77,902	318,582	422	22,833	.....	.....	6,035	395,346
Transit and reexportation in 1895	4,533	138,551	.....	4,569	6,766	.....	.....	154,419
Transit and reexportation in 1894	8,445	193,782	.....	13,564	.....	.....	.....	215,791
Increase	.....	.....	.....	.....	6,766	.....	.....	.....
Decrease	3,912	55,231	.....	8,995	.....	.....	.....	61,372
Stocks, December 31, 1895	22,479	179,375	1,786	26,133	17,829	20,186	672	268,460
Stocks, December 31, 1894	24,558	55,497	.....	.....	18,185	3,077	.....	101,307
Increase	.....	123,878	1,786	26,133	.....	17,109	672	167,143
Decrease	2,079	.....	.....	.....	356	.....	.....	.....

Hides, miscellaneous.

Description.	1874.	1875.	1880.	1885.	1890.
	Number.	*Number.*	*Number.*	*Number.*	*Number.*
Importations	1,125,441	1,350,272	1,141,475	1,229,912	1,373,821
Sales on the market	948,422	1,025,971	653,818	881,953	973,013
Transit and reexportation	208,783	231,659	244,059	298,107	341,128
Stocks, December 31	261,313	353,975	264,448	134,060	176,076

Hides, miscellaneous—Continued.

Description.	1891.	1892.	1893.	1894.	1895.
	Number.	*Number.*	*Number.*	*Number.*	*Number.*
Importations	1,437,745	1,319,637	1,504,253	1,441,766	1,311,270
Sales on the market	1,210,637	1,215,171	1,129,084	1,385,054	989,708
Transit and reexportation	152,457	240,419	229,546	215,791	154,419
Stocks, December 31	250,797	114,773	260,396	101,317	268,460

Prices at the end of December.

Description.	Weight.	1874.	1875.	1880.
	Pounds.			
Saladeros oxen	44 to 55	$16.64 to $17.50	$14.00 to $14.90	$11.20 to $13.24
Do	55 to 70½	16.64 to 17.50	15.26 to 16.08	12.20 to 14.36
Saladeros cows	30½ to 44	15.26 to 16.08	10.50 to 11.36	10.68 to 11.88
Do	44 to 57	16.82 to 17.68	14.00 to 15.08	12.20 to 14.00
Hides, dry:				
Ox		21.90 to 28.36	14.90 to 26.16	21.36 to 26.16
Cow		22.72 to 29.80	13.06 to 22.72	20.14 to 25.99

Description.	Weight.	1885.	1890.	1891.	1892.
	Pounds.				
Saladeros oxen	44 to 55	$9.80 to $12.20	$7.18 to $9.44	$6.12 to $8.22	$6.30 to $8.42
Do	55 to 70½	10.50 to 13.06	9.28 to 11.70	8.22 to 10.50	8.04 to 11.04
Saladeros cows	30½ to 44	9.28 to 10.86	6.84 to 7.88	5.24 to 7.00	5.76 to 6.68
Do	44 to 57	10.16 to 12.56	8.22 to 11.36	6.30 to 9.62	6.12 to 9.62
Hides, dry:					
Ox		17.50 to 22.24	10.70 to 16.64	10.68 to 15.08	9.80 to 14.00
Cow		14.90 to 21.00	10.16 to 14.90	9.28 to 13.42	9.28 to 12.20

Description.	Weight.	1893.	1894.	1895.
	Pounds.			
Saladeros oxen	44 to 55	$5.60 to $7.54	$6.68 to $8.04	$9.28 to $11.70
Do	55 to 70½	7.16 to 10.16	8.42 to 11.20	10.50 to 13.06
Saladeros cows	30½ to 44	5.44 to 6.28	5.10 to 6.12	8.76 to 10.16
Do	44 to 57	5.60 to 8.92	5.24 to 8.60	8.92 to 12.20
Hides, dry:				
Ox		9.80 to 14.00	10.16 to 14.00	17.00 to 21.00
Cow		9.10 to 11.88	8.42 to 11.20	14.90 to 19.24

Résumé of La Plata and Rio Grande slaughterings at the end of July (saladeros hides).

Description.	1890.	1891.	1892.	1893.	1894.	1895.
Buenos Ayres	370,600	457,000	443,000	380,900	352,000	329,000
Rivieres	803,850	839,200	736,000	903,600	861,500	946,000
Montevideo	270,100	233,900	300,000	276,900	400,000	400,000
Rio Grande	380,000	455,000	485,000	450,000	387,000	280,000
Total	1,824,550	1,985,100	1,964,000	2,011,400	2,000,500	1,955,000

Monthly movement of hides on the Antwerp market during 1895.

Month.	Arrivals.	Sales.	Stocks.
	Number.	*Number.*	*Number.*
January	92,287	126,207	60,617
February	48,617	65,132	30,875
March	124,725	47,392	74,213
April	126,353	123,044	56,211
May	85,311	100,932	36,439
June	91,751	84,569	32,961
July	192,977	100,255	100,598
August	229,814	141,936	154,439
September	67,816	51,897	169,358
October	135,778	64,222	240,914
November	90,428	27,367	299,802
December	25,413	56,755	268,460

Value of importations into Belgium of raw hides and tanned leathers.

Origin.	1890.	1891.	1892.	1893.	1894.
Argentine Republic	$5,114,800	$5,165,400	$4,676,000	$4,051,200	$4,316,800
Brazil	385,800	552,200	493,800	777,200	381,600
England	1,067,400	903,600	855,400	1,100,800	1,742,200
France	2,332,600	2,004,800	2,158,200	2,383,600	2,523,200
Germany	1,253,800	1,218,800	958,000	1,098,800	921,800
Hamburg	217,600	194,200	184,200	199,000	91,800
Holland	706,400	753,800	931,800	1,040,200	659,000
Luxemburg	51,200	30,600	89,000	33,800	14,800
Russia	101,400	87,600	43,800	9,200	2,200
Switzerland	35,000	16,600	14,000	20,200	20,600
United States	139,800	174,600	201,400	239,800	284,000
Uruguay	1,789,000	1,876,200	1,229,200	1,634,000	1,580,600

Quantities of importations into Belgium of raw hides and tanned leathers.

Origin.	1890.	1891.	1892.	1893.	1894.
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*
Argentine Republic	27,249	23,625	21,900	20,256	21,854
Brazil	1,543	2,465	2,245	3,886	1,908
England	2,147	2,340	2,271	3,085	6,052
France	7,152	6,817	7,495	7,559	8,149
Germany	237,888	251,316	270,713	270,154	276,603
Greece	.....	.....	18,000	.....	10,750
Hamburg	869,912	856,519	829,276	988,138	458,877
Holland	51,402	66,693	55,683	84,754	72,975
Italy	2,586	58,511	9,847	2,163	16,100
Luxemburg	201,491	127,340	122,773	160,440	69,657
Russia	405,411	390,922	199,330	46,046	9,558
Sweden and Norway	36,782	21,847	8,721	40,269	9,215
Switzerland	139,692	74,060	63,962	101,075	102,587
Turkey	.....	1,273	3,000	.....	270,991
United States	546	644	786	1,040	1,239
Uruguay	7,156	8,376	5,587	8,170	7,903

Value of exportations from Belgium of raw hides and tanned leathers.

Destination.	1890.	1891.	1892.	1893.	1894.
Argentine Republic	$2,200	$2,400	$1,800	$1,000	$2,200
Brazil	4,200	2,800	2,200	7,800	6,400
England	1,823,800	1,908,000	765,600	796,000	1,189,600
France	1,409,600	1,567,800	1,386,600	1,370,600	1,227,400
Germany	5,094,800	4,567,000	4,798,800	4,557,400	5,263,400
Greece	289,200	285,600	275,000	254,200	303,800
Hamburg	386,800	283,200	300,200	319,400	513,200
Holland	1,221,000	1,292,000	960,400	913,400	74,300
Italy	209,600	190,000	196,600	212,400	210,600
Luxemburg	264,400	267,000	254,800	258,600	237,600
Russia	140,200	87,200	141,000	213,800	315,800
Sweden and Norway	231,400	198,200	95,200	134,200	144,000
Switzerland	187,400	190,000	141,800	183,600	182,000
Turkey	74,400	114,200	175,800	181,800	157,000
United States	455,800	402,400	497,600	356,400	565,800

Quantities of exportations from Belgium of raw hides and tanned leathers.

Destination.	1890.	1891.	1892.	1893.	1894.
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*
Argentine Republic	2,550	3,067	2,176	1,239	2,644
Brazil	4,970	3,434	2,687	7,841	5,063
England	269,936	262,532	333,406	238,171	366,299
France	3,668	4,123	3,872	4,244	3,924
Germany	18,063	18,060	19,694	19,350	22,578
Greece	2,827	6,413	7,520	22,106	6,799
Hamburg	164,703	38,700	73,185	56,285	131,915
Holland	418,996	346,177	428,856	378,462	328,302
Italy	620,300	704,509	779,306	767,769	626,797
Luxemburg	13,067	47,322	60,042	52,663	45,508
Russia	547	369	620	908	1,213
Sweden and Norway	882,957	870,962	394,613	601,843	612,400
Switzerland	43,961	205,100	93,617	27,478	23,540
Turkey	266,313	405,319	766,076	769,535	664,132
United States	47,988	115,041	118,747	104,162	103,081

Importation of raw hides into Belgium.

Country of origin.	1893.	1894.	1895.
	Tons.	*Tons.*	*Tons.*
Argentine Republic	20,256	21,583	11,064
Australia	358	422	1,272
Brazil	3,886	1,908	2,168
British Indies	371	17	61
England	2,422	5,302	5,807
France	6,902	7,479	7,908
Germany	2,006	1,672	1,964
Hamburg	988	459	694
Holland	4,801	2,718	3,036
Russia	46	9	239
Switzerland	101	103	256
United States	995	1,188	986
Uruguay	8,170	7,903	8,725
Miscellaneous	864	1,411	1,247
Total	52,166	52,174	45,416

Importation of hides (dyed, varnished, and otherwise prepared).

Country of origin.	1893.	1894.	1895.
	Tons.	*Tons.*	*Tons.*
England	399	411	585
France	648	655	735
Germany	263	271	338
Holland	77	67	68
United States	45	54	54
Miscellaneous	4	8	21
Total	1,436	1,466	1,801

Exportation of raw hides from Belgium.

Destination.	1893.	1894.	1895.
	Tons.	*Tons.*	*Tons.*
England	6,553	6,015	5,700
France	8,459	3,246	3,598
Germany	15,811	18,070	13,393
Greece	1,187	1,500	953
Hamburg	1,322	2,005	1,041
Holland	2,935	2,305	2,553
Italy	705	538	723
Luxemburg	1,037	989	847
Norway and Sweden	586	387	422
Roumania	328	420	26
Russia	884	1,153	751
Turkey	723	624	301
United States	680	1,738	3,159
Miscellaneous	578	1,096	1,282
Total	41,788	40,086	34,749

Exportation of hides (dyed, varnished, and otherwise prepared).

Destination.	1893.	1894.	1895.
	Tons.	*Tons.*	*Tons.*
Bremen	392	380	382
England	230	348	649
France	766	658	996
Germany	376	454	420
Hamburg	55	130	66
Holland	376	326	314
Italy	63	88	58
Russia	24	60	61
Switzerland	215	200	210
Turkey	47	40	31
United States	103	101	133
Miscellaneous	244	262	168
Total	2,891	3,047	3,488

Value of imports of prepared skins.

Country.	1890.	1891.	1892.	1893.	1894.
England	$54,400	$66,400	$62,200	$68,600	$69,800
France	148,600	159,400	157,600	159,000	154,400
Germany	395,800	531,400	530,400	623,800	63,400
Luxemburg	49,400	43,200	59,600	75,800	71,200

Value of exports of prepared skins.

Country.	1890.	1891.	1892.	1893.	1894.
England	$22,700	$477,000	$599,800	$624,600	$788,000
France	109,600	161,400	135,200	119,800	79,800
Germany	261,600	336,600	338,200	382,400	372,400
Holland	35,600	42,400	63,600	56,600	52,200
Italy	40,600	42,800	41,400	50,800	29,800
Luxemburg	52,400	48,800	61,200	81,600	75,800
United States	141,400	9,200	42,800	102,800	150,400

LIEGE.

The market for American hides imported into Belgium is at Antwerp. The stock on hand in first hands was, at the end of February, 1896, 204,434 pieces. On the 11th of March, it was reduced to 189,950 pieces.

The production of hides in Belgium is so small that no statistics are made on the subject. The few thousands in the market annually are of no importance to the hide and leather trade of the country.

HENRY W. GILBERT,

LIEGE, *March 20, 1896.* *Consul.*

I have the honor to transmit a tabulated statement of the number and kind of horned cattle slaughtered in the abattoirs of the principal cities in the Kingdom of Belgium. It is regrettable that complete statistics on this subject are not reported by all the communes of the Kingdom. The table is supplementary to my report dated March 20, 1896.

Horned cattle slaughtered in the principal cities of Belgium.

Cities.	Year.	Population.	Steers.	Bulls.	Calves and yearlings.	Cows.	Heifers.	Classes not specified.
Brussels	1894	187,924	*13,115	7,193	.....	6,236		.....
St. Josse Ten Node.	1893	31,380	.....	348	.....	267		.....
Schaerbeek	1894	57,113	2,317		.....	826		.....
Nivelles	1893	11,204	337		.....	703		.....
Liege	1894-95	160,848	3,541		2,719	7,810		.....
Herstal	1894-95	.....	.....	9	.....	103	69	.....
Verviers	1894	51,196	323	92	163	3,257	263	.....
Dison	1894	13,064	22	2	.....	456	16	.....

*Including two-year-olds.

Horned cattle slaughtered in the principal cities of Belgium—Continued.

Cities.	Year.	Population.	Steers.	Bulls.	Calves and yearlings.	Cows.	Heifers.	Classes not specified.
Huy	1894	14,983	207	270	.....	755	351	.....
Mons	1894	25,254	196	36	338	1,430	482	.....
Tournai	1894	35,254	912	779	.....	1,566	1,206	.....
Binche	1894	10,529	122	.....	.....	780	760	.....
Charleroi	1894-95	22,636	97	100	.....	1,116	261	.....
La Louvière	1895	14,985	30	36	48	1,307	42	.....
Ghent	1888	155,746	2,005	.....	.....	13,699	17,551	.....
Alost	1892	26,826	401	39	.....	229	.....	.....
Tirlemont	1893-94	.....	.....	.....	.....	.....	.....	5,546
Antwerp	1893	.....	.....	.....	.....	.....	.....	17,974
Arlon	1894	.....	.....	.....	.....	.....	.....	7,092
Courtrai	1894	.....	.....	.....	.....	.....	.....	2,593

HENRY W. GILBERT,

LIEGE, *April 24, 1896.* *Consul.*

A review of the hide and leather market in the Kingdom of Belgium for the year 1895 shows that the fluctuations in prices during the year were considerable. The scarcity of hides on all the European markets during the first months of the year was felt more toward spring, and in the summer was greater than had been known in the annals of the leather market for the past twenty years. In August, the prices were the highest, and equaled those attained in the years 1875 and 1876. The sudden rise in the price of hides was caused by the abundant food supply for animals during the preceding two years; for this reason, the slaughtering of horned cattle was greatly reduced in Europe, and especially so in the United States. These conditions changing, caused the placing on the market of large numbers of hides. The importation of foreign hides into Belgium, however, for the year 1895 was small, owing, it is said, to the American Hide and Leather Trust having purchased all hides obtainable both in the markets of the United States and other countries. An enormous rise in prices occurred in the month of August, which reached from 75 to 80 per cent for light salted beef hides, 40 to 50 per cent for heavy salted beef hides, 110 to 120 per cent for light salted cowhides, and 80 to 90 per cent for heavy salted cowhides.

During the period of high prices for salted hides, tanned leather was also affected, though to a somewhat less extent. The unusually dry autumn reduced the demand, and the sale of hides for the last three months of the year was only 148,350. During the same period in 1894, 478,000 hides were sold. In the month of December, however, the demand increased, and prices ruled so that the year ended with a fair profit to dealers.

The quality of salted hides from La Plata was very satisfactory as to strength and waste, but the same can not be said of the salting, which, in many cases, was badly done, causing large lots to redden in the storehouse.

The leather exchanges in Belgium have notified, through the Chamber of Commerce at Antwerp, the Chamber of Commerce of Buenos Ayres of the necessity of better salting and more care being taken in the packing and shipping of hides in the future.

The demand for hides "mataderos" from Buenos Ayres has fallen off considerably for several years, owing to their defective quality. Few lots arrived during 1895. The "mataderos" of Montevideo, however, are largely imported and much sought for by buyers in the Belgian markets.

The sales made during the year for future delivery have reached the exceptionally large figure of 406,516, against 68,195 in 1894.

There was but one auction sale of hides during the year, at which 88,000 were offered.

The importations of dry hides from the Argentine Republic were 88,200 in 1895, 110,400 in 1894, and 183,000 in 1893.

The "campos cows," the most sought after, advanced 110 per cent. Beef hides advanced from 70 to 80 per cent.

During the month of August, the demand was light. Prices were unsteady at the close of the year.

The salted hides received from Australia during the year show a large increase over that of 1894. In 1895, 46,117 were imported, against 10,362 in 1894. The stock of hides at the close of the year was small.

England, Holland, and Germany buy hides on the Belgian markets. The nominal price of hides for the year is estimated as follows:

Description.	Weight.	Price per pound.	
		1894.	1895.
Mataderos:	*Pounds.*		
Beeves	26 to 30	$0.07 to $0.08	$0.11 to $0.12
Cows	20 to 22	.06 to .07	.10 to .11
Campos:			
Beeves	24 to 30	.06 to .07	.10 to .11
Cows	18 to 20	.05 to .05½	.08 to .10

HENRY W. GILBERT,

LEIGE, *June 9, 1896.* *Consul.*

DENMARK.

COPENHAGEN.

Between the years 1890 and 1895, as I am informed by a firm of merchants, with the exception of one or two small lots, there were no cowhides shipped from Denmark to the United States. At the beginning of 1895, however, the condition of the American market again permitted the importation of hides from Denmark, and for the first six months of the year a

brisk trade was carried on with New York, the shipments amounting in value to $70,000, which is considered a fair showing for this place. During these six months, prices gradually rose from 5½ cents per pound in January to 8½ cents in July, when shipments to the United States ceased. About this time an unusual activity was developed among the European tanners and the price of hides reached as high as 10 cents per pound, causing heavy importations, especially from South America. As a result, the market was overstocked and prices fell in proportion. For the last three months, however, prices have again improved, although the supply is said to be in excess of the demand.

As to the supply of Danish cowhides on hand, no statistics are available, but a dealer informs me that as nearly as can be reckoned, there are at present about 25,000 hides in Denmark, of which 21,000 are domestic and 4,000 imported from Germany. As the great majority of hides imported into Denmark from North and South America come via Hamburg and are credited to Germany, the 4,000 foreign hides mentioned above can safely be classed as American, and, most probably, South American.

In connection with the stock of leather on hand, I have visited some half dozen of the principal tanners, but have absolutely failed to gain any data upon which to base even an estimate. All parties, however, are agreed that there is not one pound of domestic leather exported from Denmark; that the supply is not equal to the demand, and that, although the customs statistics for 1894 report 82,000 pounds of leather as exported, it all consisted of transit goods, passing through, and not originating in, Denmark.

The following table shows the imports and exports of hides and leather for the year ended December 31, 1894. Statistics for 1895 are not yet available.

Imports of hides and leather in 1894.

Imported from—	Quantity.	Imported from—	Quantity.
Hides.	*Pounds.*	*Leather.*	*Pounds.*
Farõe Islands	3,595	Norway	346
Iceland	376,370	Sweden	1,794
Greenland	28,075	Great Britain	51,599
Norway	177,188	Holland	2,255
Sweden	479,055	Belgium	9,583
Russia	30,660	France	1,405
Germany	1,255,638	Italy	265
Great Britain	140,617	United States	5,257
Holland	9,970	South America	265
Belgium	123,950	Places not given	58,431
France	1,105,112	Germany	1,144,456
United States	8,700	From free port	625
Other parts of North America	360,000	Total	1,276,281
Spain	50		
Places not given	313		
Total	4,099,293		

Exports of hides and leather in 1894.

Exported to—	Quantity.	Exported to—	Quantity.
Hides.	*Pounds.*	*Leather.*	*Pounds.*
Farõe Islands	33,149	Farõe Islands	8,430
Iceland	48,171	Iceland	22,199
Norway	420,021	Norway	3,215
Sweden	1,203,948	Sweden	22,568
Germany	4,323,952	Russia	773
England	1,186,864	Germany	15,458
Belgium	433,624	Great Britain	812
Holland	4,802	France	409
France	1,113,120	United States	4,614
Portugal	672	Places not given	4,083
Russia	618,097	Total	82,511
Spain	33,635		
Italy	6,880		
Greece	10,410		
Total	9,437,345		

Merchants agree that at least 1,000,000 pounds each of the hides and leather credited in the importations to Germany are from the United States and South America, and that the exports of leather are wholly goods in transit.

Objections to United States leather.—In the course of my investigations, I have met with some unfavorable comment concerning the preparation of American leather, which I think proper to bring to the attention of those concerned. One of the large dealers consulted by me declares that there is some prejudice against the use of hemlock leather. Oak bark is used exclusively in Denmark for tanning purposes, and dealers and manufacturers think it gives a better finish to the leather than hemlock bark. It is also said that pieces of meat are sometimes left on the hide and pressed into the leather during the process of tanning. This results in one side of the leather becoming rough and flaky and the manufacturer and shoemaker using such a piece must first trim away such soft parts before coming to the smooth, hard leather. Of course, this occasions loss of time, and, as the leather is sold by weight, some loss would also result to the purchaser. A comparison of this hemlock leather with a piece of leather tanned in France was decidedly in favor of the French leather, the one presenting a smooth, hard surface on both sides, the other smooth and hard on one side, while the other side was so flaky that little pieces could be readily pinched off with the fingers.

In view of the fact that the so-called Valdivia leather will soon become, if it has not already become, a serious competitor in our European trade, these facts, if they do in truth exist, should furnish food for reflection to our American exporters and tanners.

ROBERT J. KIRK,

COPENHAGEN, *February 15, 1896.* *Consul.*

Referring to my report on hides and leather dated February 15, 1896, I am now able to give statistics of imports and exports for the year 1895, as contained in the report of the trade of Denmark by the Merchants' Society of Copenhagen, as follows:

Description.	Hides.	Leather.
	Pounds.	*Pounds.*
Imports	4,689,868	2,083,096
Exports	8,702,691	227,022

ROBERT J. KIRK,
Consul.

COPENHAGEN, *April 8, 1896.*

FRANCE.

HAVRE.

Referring to the inquiries made in Department circular, I have the honor to make the following report:

(1) The stock of hides and skins was, on January 31, 1896 (coming from all countries), 270,136.

(2) The stock is composed wholly of foreign hides.

(3) Countries from whence they came: La Plata and Rio Grande, 144,151; other countries, including the United States, 125,985.

(4) This stock is intended, for the most part, for French consumption. It is impossible, in advance, to determine in what proportion it will be exported and to what countries the exportation will be made, if made at all.

(5) The following shows the importations from and sales to the United States of hides at the port of Havre:

Description.	1891.	1892.	1893.	1894.	1895.
Importations	26,768	22,461	140,883	145,484	91,847
Exportations	26,963	22,461	127,938	157,587	91,868

It appears that hides are frequently shipped to the United States for speculative purposes. The same hides are returned, after they have fulfilled the object for which they were shipped, under an American mark. It has been stated by a Havre merchant that he has seen bales of hides imported from the United States that bore his private mark, showing that they had been exported from here and then returned.

(6) The president of the chamber of commerce, to whom I am indebted for the above information, informs me that no increase in the consumption

of American leather can be made in the French market without detriment to the home supply, and such an increase is therefore not desirable.

It is quite evident that any demand for American leather must depend on the price of the article. If the price of leather is very low in America, it may be exported to France, notwithstanding the alleged conflict with the interests of the French producers.

The question of increasing the demand for American leather, as in the case of other American products, bears a relation to the character and quality of the goods exported. It is represented that American goods are not always what they are represented to be. One firm, which acknowledges that even patriotism would not prevent its orders being placed in the cheapest markets, declares that it has had to abandon handling certain American products, because they do not come up to the required standard. The samples, it appears, when tested, prove themselves to be all that can be desired, but the goods, when they come to hand, are not up to the samples. I am inclined to think that such occurrences, whether the result of accident or otherwise, have had the effect of injuring our trade in this and perhaps in other foreign markets.

I have already referred, in a previous report, to the fact that our traders rely too much upon foreign agents. They should choose agents from among their own countrymen, not from foreigners, who will become acquainted with their trade secrets and will use them for their own benefit. America should be better represented by commercial travelers who have command of foreign languages, without which no agent can do good service to his employer. It not infrequently happens that traveling agents call upon the consul and ask for an interpreter. As far as practicable such aid is rendered; but our commercial classes, who desire to extend their foreign trade, should keep in view the absolute necessity of their agents being acquainted with the language of the country in which they desire to build up trade. Only in this way can they hope to escape the obvious disadvantages under which they suffer by comparison with their foreign competitors. I am quite certain that if proper agents were sent out to represent our traders abroad, they would prove a most important feature, of exceptional interest and value, and would, no doubt, effect a marked improvement in our foreign export trade. This is so well understood in other countries that they pay the greatest attention to the details of such matters and to the success of syndicates for promoting foreign commerce.

C. W. CHANCELLOR,

HAVRE, *February 5, 1896.* *Consul.*

MARSEILLES.

In reply to Department circular, the following table is presented, indicating the imports of hides for the year 1895:

Country of origin.	Number of hides.	Country of origin.	Number of hides.
Argentine Republic	10,039	Zanzibar	5,500
Brazil	3,112	Arabia	8,100
United States	10,277	Senegal	15,286
Martinique	704	Mauritius and Réunion	5,124
Australia	402	Madagascar	4,977
Central America	1,314	Algeria and Morocco	34,285
India	58,682	Other countries	18,858
China	33,390		

There were imported, therefore, in 1895, a total of 210,048 hides. During the same year, the home product from the abattoirs of Marseilles and immediately surrounding towns was about 25,000 hides.

It is not possible to ascertain the exact amount on hand of either raw hides or leather. Inquiries have been made both of dealers and the chamber of commerce, but as to these products, no statistical matter is provided. The stock is, however, in each case, very limited; so much so that a Government inquiry was recently suggested having particular reference to the influence of present conditions on contracts for shoes for the army.

The local export of leather is confined to Mediterranean ports and Germany. A very small amount is annually sent to the United States. Practically, no American leather is used at Marseilles, though dealers receive occasional sample lots. It is highly regarded by the trade, and its merits particularly commended by shoe manufacturers who have been questioned in regard to it. It is doubtful, however, if American leather could compete with the local product by reason of the tariff duties, which, as to certain grades, are excessively high. The duties range from $11.58 to $36.67 per 220 pounds, the latter rate being applied to glazed leathers.

CLAUDE M. THOMAS,

MARSEILLES, *June 3, 1896.* *Consul.*

GERMANY.

BRESLAU.

I submit herewith a translation of what appears to me to be an interesting article concerning unprepared hides and skins, which appeared in the last annual issue of the Handelskammer (Board of Trade) of Breslau.

FREDERICK OPP,

BRESLAU, *June 6, 1896.* *Consul.*

[Translation.]

UNPREPARED HIDES AND SKINS.

The year 1895 was, for the hide trade, an extremely exciting and abnormal one. It caused such price fluctuations of nearly all articles of this trade as have not happened in thirty years.

For several years, since about 1891, this trade experienced a decline, interrupted at a few intervals. The prices, as well for the unprepared material as for the finished products—tanned hides—sank to such a point that the tanners, especially, could scarcely exist. This depression was everywhere nearly equal in Europe as in America.

Perhaps, considering that it must not last if the leather industry were not to perish, the majority of the most wealthy tanning concerns of America formed, in the year 1894, a corporation for the purpose of bringing about an improvement. In the true estimation of the circumstances, the corporation began to raise the extremely low prices of the rough material, starting from the point that the product made therefrom must also become dearer. They purchased large quantities of unprepared hides, first from the American markets, and later also from the German ports, which partly served for the current supply of the united factories; partly, also, to be kept in stocks.

In the beginning of 1895, there appeared herefrom an increase (about 10 to 20 per cent) of the prices of American skins, as well in Chicago and Buenos Ayres as in the European ports of Hamburg, Havre, and Amsterdam. In April, 1895, America also began to operate upon the German hides, which were still neglected and very cheap, and advanced, by larger purchases in France and Germany, the prices of same about 10 per cent. The German tanners, discouraged by the annual decline of their products, regarded this movement skeptically and remained passive. In the month of May, owing to further purchases of America, and also of England, the prices rapidly rose about 10 per cent. The stocks of the German manufacturers, on the contrary, were used up, owing to curtailment of their purchases, and after the prices of finished leather finally commenced to follow the rising of the rough material, the German leather manufacturers were seized in June by real eagerness to buy. Up to this time, the rise was a desired and beneficial regulation of the price of the raw material, as well as of the product which was, until that time, an abnormally low one.

What now followed can only be recorded with regret. Partly by speculative purchases of the dealers, partly by overhasty purchases of the manufacturers, there began a feverish pursuit for hides and finished leather. From Austria-Hungary, to which country we export, immense quantities of unprepared hides, and also finished leather, were bought for prices rising from week to week. Owing to this, many kinds of hides and leather became from 75 to 80 per cent dearer than in March and April.

America had carried out its object, and remained from that time passive as to the prices, having exceeded the limit, and conversely tried to realize with profit the purchases made in June and July, by offering for sale the merchandise here in Europe. This finally brought moderation.

If the autumn had been a cold and moist one and more favorable for leather consumption, the absolutely necessary reaction could have taken place in a slow manner. A regular moist autumn brings an extraordinarily great supply and consumption of leather, and the large stocks of leather and hides could have been disposed of with a small and gradual decline of the prices. But the autumn was unusually dry and warm; the consumption of leather stopped almost altogether, and this circumstance, in connection with the stopping of any export, produced in September a rapid and complete change of conditions. Everybody wanted to sell his immense and unusually dear stocks, so that up to December the prices went down about 30, 40, or 50 per cent. Nearly the same prices as in the month of March prevailed. Of course, damage was caused by this, and although the months of May to August, inclusive, brought a good profit, the year 1895 closed for many of this trade with smaller profits than in former years, without mentioning that large quantities of dear goods were still on hand in 1896.

It is not necessary in the report for 1895 to inquire as to the special sorts, since all sorts of dry and salted light cowhides, salted heavy oxhides, salted bull hides, horsehides, and calfskins experienced, during the last eight months, almost the same rapid price fluctuations. Cowhides mostly rose from 23 to 42 pfennigs (5½ to 10 cents) per half kilogram (1.1025 pounds), and could be bought in December again for 25 pfennigs (5.95 cents). Calfskins which cost in the spring 3½ to 4 marks (83.3 to 95.2 cents) apiece, reached nearly 6 marks ($1.43) and remained so the proportionally longest time, although the price went down in December to 4½ or 5 marks ($1.07 to $1.19) apiece.

COLOGNE.

As there are no local statistics published, I have found it impossible to ascertain the stock of hides and leather on hand in this district. According to the official statistics of the German Empire, the annexed table shows the imports and exports of various kinds of hides into and from Germany, according to countries, in 1895.

Green and salted neat hides.

Countries.	Imports.	Exports.
	Tons.	*Tons.*
Belgium	3,820	799
Denmark	466	614
France	3,405	2,256
Great Britain	825	2,401
Netherlands	1,634	1,017
Austria-Hungary	1,949	3,846
Switzerland	2,445	347
British East India	227	.....
Argentine Republic	15,053	.....
Brazil	10,404	.....
Chile	545	.....
Mexico	0.3	.....
Puerto Rico and Cuba	2,400	.....
Uruguay	1,966	.....
United States	4,858	3,791
Free harbor of Hamburg	.....	287
Roumania	.....	79
Russia	.....	6,429
Sweden	.....	837

The total amount imported was 51,091 tons; the total amount exported, 22,933 tons.

Limed and dried neat hides.

Countries.	Imports.	Exports.
	Tons.	*Tons.*
Belgium	153	.....
Denmark	47	104
France	116	447
Great Britain	903	355
Netherlands	404	284
Austria-Hungary	1,485	1,527
East Africa	190	235
British East India	10,926	....
China	628	.....
Dutch East Indies	239	.....

Limed and dried neat hides—Continued.

Countries.	Imports.	Exports.
	Tons.	*Tons.*
Argentine Republic	1,555	.....
Brazil	3,144	.....
Colombia	75	.....
Mexico	55	.....
Uruguay	235	.....
Venezuela	231	.....
United States	1,209	.....
Central America	169	.....
Norway	.....	119
Roumania	.....	0.3
Russia	.....	2,166
Sweden	.....	450
Servia	.....	0.9
Turkey	.....	37

The total amount imported was 22,402 tons; the total amount exported, 6,395 tons.

Calfskins, green and salted.

Countries.	Imports.	Exports.
	Tons.	*Tons.*
Belgium	629	301
Denmark	113	.....
France	2,264	333
Great Britain	81	489
Netherlands	140	.....
Sweden	461	.....
Switzerland	276	151
United States	329	.....
Austria-Hungary	.....	107

The total amount imported was 5,006 tons and the total amount exported was 3,361 tons.

Calfskins, limed and dried.

Countries.	Imports.	Exports.
	Tons.	*Tons.*
Denmark	915	.....
France	72	1,591
Great Britain	127	160
Netherlands	200	.....
Norway	154	.....
Austria-Hungary	2,399	291
Russia	4,103	89
Sweden	688	.....
Switzerland	108	173
British East India	16	.....
Argentine Republic	281	.....
Brazil	37	.....
Uruguay	20	.....
United States	26	397
Belgium	.....	130
Italy	.....	232
Spain	.....	227

The total amount of imports was 9,271 tons and of exports 3,361 tons.

In the months of January, February, and March, 1895, the trade in hides was slack. In April, the American trust bought up the whole stock of hides here of every description. In consequence of this, prices rose continually till June, when they were more than double those of January. These high prices were maintained during the months of July and August, when the trade began to stagnate and prices gradually sank, until they reached their former level. At present, trade is in a very healthy state and prices are again firm.

The average prices of hides in Cologne in 1895 were: Cologne red ox-hides, weighing 45 kilograms* and upwards, 19.04 cents per kilogram; weighing from 40 to 45 kilograms, 18.08 cents per kilogram; and weighing from 35 to 40 kilograms, 17.13 cents per kilogram; cowhides, 13 cents per kilogram; bull hides, 12 cents per kilogram; flat black oxhides, weighing 30 kilograms and upwards, 13⅓ cents per kilogram; calfskins, weighing more than 5 kilograms, 19.04 cents per kilogram, and under 5 kilograms, 89¼ cents each.

The firmness exhibited toward the close of the year 1895 continued in January, and various kinds of hides experienced a rise up to 10 per cent. The sales were of considerable importance. Best strong oxhides continued in demand, flat hides neglected; cowhides, especially good sorts, were in lively demand. There was also an increased inquiry for damaged hides. Horsehides, firmer; heavy selections chiefly in demand. In calfskins, the demand for salted skins of light weight continued.

In the month of February, in consequence of the high prices asked, there was little business done. Supplies were small and the stocks not very large. Raw hides and skins were in demand, but buyers kept back on account of the high prices that ruled.

The latest prices are: Heavy oxhides, 7 to 7.14 cents per pound; very heavy hides, 7.37 to 7.61 cents per pound; lighter ox and cow hides, 6.18 to 6.42 cents per pound; bull hides, 6 to 6.18 cents per pound; light calfskins, 83.3 to 89¼ cents apiece, and heavy calfskins, 9.28 to 10 cents per pound.

The following shows the imports and exports of sole leather and leather not specially designated for the year 1895, according to countries:

Sole leather.

Countries.	Imports.	Exports.
	Tons.	*Tons.*
Belgium	58	.....
Great Britain	125	.....
Chile	1,232	.....
United States	144	.....
Denmark	.....	72
Norway	.....	59
Austria-Hungary	.....	97
Switzerland	.....	157

*1 kilogram=2.2046 pounds.

The total amount imported was 1,796 tons and the total amount exported 775 tons.

Leather not specified.

Countries.	Imports.	Exports.
	Tons.	*Tons.*
Belgium	968	62
France	252	300
Great Britain	1,238	688
Netherlands	113	149
Austria-Hungary	290	893
United States	337	63
Denmark	.....	99
Italy	.....	244
Roumania	.....	101
Russia	.....	46
Sweden	.....	855
Switzerland	.....	621
Brazil	.....	59
Australia	.....	24

The total amount imported was 3,327 tons and the total amount exported 3,817 tons.

It will be seen from the above figures that in 1895 there were imported into Germany from the United States 144 tons of sole leather and 337 tons of leather not specified.

The Ledermarkt, in February, made the following report on the leather trade:

At last, more favorable news has come from America. Large quantities of leather, though at somewhat weaker prices, have been sold over there, quantities by far greater than any since the fall in price which occurred after the late great rise. Considering the great influence which the state of the market of the United States exercises on our position, this fact is of considerable importance and will probably soon make itself felt. The importers of American leather—chiefly of "spalt" leather—who supply the German market, have again cabled over large orders, which, however, were received with great reserve, and under bidding, even to a very moderate extent, were refused.

The activity lately developed by the so-called trust, *i. e.*, the United States Leather Company, is of great importance. The representatives of the company are at present in England. In order to make great sales possible, they have lowered their quotations for hemlock sole leather from $1.90 to $1.19 per cwt. In spite of this, these prices are still high enough to allow the company a good profit.

WM. D. WAMER,

COLOGNE, *March 5, 1896.* *Consul.*

DUSSELDORF.

In Dusseldorf, as in many other German towns of some importance, the sale of the hides and skins taken from the animals which are killed for the purpose of being consumed by the population of the city is in the hands of an association to which all butchers doing business in this place

belong. In the public slaughtering establishment, which is owned by the community and under the control and management of its officers and which is the only place in the town where, according to the laws in force, animals of any kind, except poultry, may be slaughtered, the association has proper storerooms provided, where the hides of the animals are delivered into the hands of persons in their employment who attend to the cleaning, salting, and other preparations necessary to render the hides ready for sale, provided no objection is raised on the part of the veterinary physicians, by whom every animal must be thoroughly and carefully inspected before, and again after, killing, according to strict laws and regulations.

From time to time, the stock thus collected is sold at public auction for the account and benefit of the members of the aforesaid association.

In order to give an idea of the quantity of hides and skins produced in this consular district, I have the honor to submit the following table showing the number of animals which were slaughtered at the establishments at Dusseldorf and Essen during the years ended March 31, 1893 and 1894. These two communities are the largest in this district and represent about one-sixth of its meat-consuming population.

Animals slaughtered.

Description.	Dusseldorf.		Essen.
	1892–93.	1893–94.	1893–94.
Oxen and bulls	3,858	4,161	2,766
Cows	6,510	6,862	
Young cattle	4,015	4,083	5,392
Calves	16,484	17,746	10,314
Sheep	16,376	23,697	5,491
Horses	1,113	1,263	405
Pigs	30,791	31,982	28,739
Miscellaneous	10	14	.....
Total	79,157	89,808	53,107

The following average prices were obtained in 1895 for hides and skins of animals in good condition and without horns. Hides not skinned off and cleaned properly and showing any cuts or holes or chaps are not accepted without an extra discount of 15 to 25 per cent.

Description.	Price per 1.1023 pounds.	
Oxen:		
Red—	*Marks.*	*Cents.*
Over 50 kilograms	0.43	10.2
From 40 to 50 kilograms	0.38 to .40	3.85 to 9.52
Up to 40 kilograms	.32	7.62
Black—		
Over 50 kilograms	.36	8.27
From 40 to 50 kilograms	.34	8.09
Up to 40 kilograms	.32	7.62

Average prices of hides and skins in 1895—Continued.

Description.	Price per 1,102 pounds.	
	Marks.	*Cents.*
Cows:		
Up to 40 kilograms	0.30	7.14
Over 40 kilograms	.35	8.38
Bulls:		
Over 45 kilograms	.27	6.43
Up to 25 kilograms	.26	6.19
Less than 25 kilograms	.27	6.43
Young cattle	.34	8.09
Calfskins:		
Heavy	.40	9.52
Light	.50	11.2
Sheepskins:		
Without wool	1.15	27.37
With wool	2.00 to 3.75	47.6 to 89.2

While it appears from the statements of the German statistical bureau that the imports of hides and skins into Germany are considerably greater than exports, this consular district is an exception to the rule; for, in this district, the animals killed for purposes of consumption furnish not only a sufficient quantity of hides for the few tanneries and leather manufacturers, but leave quite formidable quantities for exportation. The importation is limited to oxhides for sole leather coming from Buenos Ayres; but even this importation is very moderate. During the year ended March 31, 1894, the quantity of 6,450 kilograms (14,220 pounds) is all that was entered at the custom-house at Dusseldorf, while for the year following the figure went down to 6,150 kilograms (13,558 pounds). I was unable to obtain statistics showing the quantities sent away from this place, but I was told by competent parties that about one-third of the hides produced in this city are sent to Belgium and Holland, some to France, and the rest to eastern and southern Germany. A few lots of light oxen skins were sold to dealers for shipment to the United States.

The manufacture of leather in this consular district is of less importance than in other parts; still there are several small places in the neighborhood (Hilden, Wickrath, Mülheim-an-der-Ruhr, and Mülheim-am-Rhein) with considerable tanning establishments. Their output is not small and finds a market all over Germany; small quantities are also exported to France, England, and Italy.

Cologne is the leather market for this part of the Empire, where the manufacturers of machine belting and retailers furnishing shoemakers' supplies cover their wants.

The prices of leather, which had commenced to advance during the spring of last year until they were about 20 per cent higher, are falling again, to the great distress of the parties concerned in the trade, and the chances for foreign leather on German markets are steadily declining, owing to the constant progress made by German manufacturers in the methods of tanning.

In one of the last numbers of the Gerberzeitung (Tanners' Journal) the following prices, attained at the leather exchange at Cologne, are reported:

Description.	Price.	
	Marks.	*Cents.*
Leather for soles,* first quality:		
South American—		
Heavy	1.65 to 1.75	39.3 to 49.2
Middle	1.40 to 1.50	35 to 35.7
Light	1.20 to 1.30	28.6 to 30.9
Oxen, for the army—		
Heavy	1.70	40.5
Middle	1.40 to 1.55	35 to 36.9
Light	1.20 to 1.60	25.6 to 36.1
Leather belts:		
Heavy backs	2.20 to 2.40	52.4 to 57.1
Middle	2.00 to 2.20	47.6 to 52.4
Light	1.70 to 1.80	40.5 to 42.8
Leather of young cattle:		
For the army, first quality (at 15 pounds apiece)	1.80 to 1.90	42.8 to 45.2
Shoe laces, first quality	2.00 to 2.30	47.6 to 54.7
Halves—		
First quality	1.50 to 1.65	35.7 to 39.3
Second quality	1.20 to 1.40	28.6 to 33
Kips:		
First quality—		
5 to 6 pounds	2.10 to 2.30	51 to 54.7
6 to 7 pounds	1.70 to 2.00	40.5 to 47.6
Second quality—		
5 to 6 pounds	1.60 to 1.75	38.1 to 41.7
6 to 7 pounds	1.10 to 1.40	26.2 to 33.3
Harness leather:		
First quality, brown and polished—		
For the army	2.00 to 2.30	47.6 to 52.4
For ordinary use	1.40 to 1.60	33.3 to 38.1
Second quality, brown and polished	1.20 to 1.40	28.6 to 33.3
Vache leather:		
Oxen—		
Heavy	.70 to .80	16.7 to 19
Light	.80 to .90	19 to 21.4
Cow	.90 to 1.00	21.4 to 23.8

* Mixed tanning, 10 to 20 pfennigs less.

In former years, American leather was used here to some extent by manufacturers of machine belting and shoemakers, but there were many complaints on account of the want of care in its preparation. It was found in many instances that the skins had not been carefully enough stripped from the bodies of the animals and showed many chaps and cuts; the leather was thereby rendered unfit for many purposes, especially for the manufacture of machine belts. Besides, there was a lack in cleaning which increased the weight, and thereby the price, of the leather, but reduced its value, people being forced to scrape off and remove the dirt before using the leather. The article became too expensive, owing to these defects, besides causing trouble and annoyance.

Although it is admitted that the quality of the American product has undergone a favorable change in late years, the above is stated as one of the principal causes of the decline of the imports of American leather. At

present only certain specialties, such as calf leather for uppers, is imported into this district.

As already stated, prices are low, and the market is so well supplied with home products that the prospects for a promotion of the American leather trade in this country are rather unfavorable.

P. LIEBER,

DUSSELDORF, *February 5, 1896.* *Consul.*

FRANKFORT.

The year 1895 will long be remembered as one of the most eventful and exciting in the history of the hide and leather trade, and throughout this episode, Germany, as one of the principal leather manufacturing countries of Europe, played an important rôle. During the first quarter of last year, the general situation, in respect to prices, demand, and supply, was about normal. But in April, there came a sudden and ominous rise in the hide market, accompanied by a marked shortening of the supply from abroad. American buyers, agents of the associated tanneries of the United States, appeared at Antwerp and the other leading European hide markets and bought up practically the entire visible supply, creating a scarcity which sent hides, and, in consequence, several leading classes of leather, upward in value to the extent of from 40 to 70 per cent. The rise reached its highest point in August, and thenceforward prices have gradually declined until they are now about 20 per cent for upper leather and 40 per cent for horse leather below the maximum figures of last summer.

The result of this crisis and its attendant circumstances is that (1) the stock of leather now in the hands of German tanners is far below the usual quantity at this season of the year; (2) that the leather now held by German tanners has been mostly made from hides bought at high rates, and must therefore be sold for high prices to save the tanners from serious loss; (3) that the net effect of the year's experience has been very severe upon the German shoe manufacturers, who, being unable to combine and force upward the selling price of their product, have gone on making and selling shoes at former prices from leather which has cost from 15 to 30 per cent more than the rates upon which their selling price lists were based, until many of the shoe-making firms in this country are in a difficult situation, and leather dealers are obliged to exercise great discretion in extending them credit for materials.

The cause which has mainly prevented a combination to force upward the prices of shoes, in keeping with the increased cost of leather, has been the apprehended danger of inducing large imports of foreign-made shoes, particularly those from the United States, which, if once thoroughly established, would be, on account of their superior elegance and excellent quality, very difficult to dislodge.

LEATHER.

The German market for upper leathers of most kinds is practically controlled by an association or syndicate of four powerful tanning firms in

West Germany, viz, Grunelius Heyl and Doerr & Reinhardt, at Worms, Friedenberg, at Weinheim, and Messrs. Meyer, Michel & Doenninger, at Mayence. Of these firms, three are located in the consular district of Mannheim, which is, therefore, the leading leather district of Germany, so far as the homemade product is concerned.

Sole leather is tanned almost exclusively in North Germany, notably in the province of Schleswig-Holstein. Such as is imported comes mainly to the ports of Hamburg and Bremen, and there is within the supervision of Frankfort but one large importer of sole leather, viz, a branch house in Wurtemberg of Messrs. Schellkopf, at New York.

Upper leathers are imported in large quantities from the United States and other countries, the receipts of American leather during the past year by one firm (Messrs. F. Autenrieth & Co.) having aggregated more than $400,000 in value. There being no statistics of leather imports or exports for any such arbitrary division of territory as a consular district, the best that can be done in response to the present demand for such information will be to give the total imports of leather and hides into Germany from all countries during a specified recent period. The latest figures now available cover the receipts of leather during the eleven months from the 1st of January to the end of November, 1895. During this period, Germany imported 18,746,420 pounds of leather, against 15,803,020 pounds received from abroad during the corresponding eleven months of the preceding year. These leather imports are classified by the imperial statistics under four general heads, viz, sole leather, glove leathers (morocco, cordovan, etc.), "leather not otherwise specified" (which includes upper leathers for boot and shoe manufacture, harness, trunk, and lining leathers), and, finally, sheep and goat skins from which the wool or hair has been removed and the skins advanced to a certain point of manufacture into leather. In respect to origin, the imports of the eleven months now under consideration were derived as follows:

(1) *Sole leather.*—Total imports, 3,648,040 pounds, of which 2,474,880 pounds came from Chile, 306,240 pounds from the United States, 247,280 pounds from Great Britain, and 121,880 pounds from Belgium, the remainder being derived from various other countries.

(2) *Glove leathers (morocco, cordovan, etc.).*—Total imports, 1,744,380 pounds, of which 1,057,740 pounds came from France, 281,160 pounds from England, 119,300 pounds from Austria, 42,020 pounds from the United States, 33,380 pounds from Russia, and the balance from Holland, Belgium, and Italy.

(3) *Upper leathers, harness and trunk leathers not otherwise specified.*—Total imports, 6,880,720 pounds, of which 2,530,000 pounds came from Great Britain, 2,048,420 pounds from Belgium, 678,040 pounds from the United States, 622,820 pounds from Austria-Hungary, 517,660 pounds from France, and 220,220 pounds from Holland.

(4) *Sheep and goat skins, with wool or hair removed and partially tanned.*—Total imports, 6,473,280 pounds, of which 3,480,620 pounds (or more than

half) were supplied by Great Britain; 1,493,140 pounds came from the East Indies, 979,160 pounds from France, 133,100 pounds from Belgium, and 119,460 pounds from Austria-Hungary.

Market for United States leather in Germany.—The outlook for American leather in the German market during the coming season is regarded here as exceptionally promising. As has been already stated, the stocks of domestic leather on hand are generally small and held at high prices. German tanners sold last year most of their accumulated stocks with large profits, and are, therefore, in a condition to hold their present supply for lucrative prices. Certain qualities of American leathers, such as chrome-tanned kid, glove, grained, satined, and waxed splits have become a necessity to many German shoe manufacturers, for the reason that they can not be as well tanned in Germany. American hemlock and oak tanned sole leather is highly esteemed in this country, but its use is hampered by the high import duty which is imposed by the German tariff. No doubt the trade in American upper leathers could be largely increased by our exporters sending their agents to make direct sales to boot and shoe firms in this country, who, like most German manufacturers, seek constantly to establish more direct relations with the original sources of all imported materials. It is estimated that, through such direct purchases of leather, a saving of 10 per cent might be made in the cost of their imported stock, but, for the reasons already given, many German shoe manufacturers are now pinched between the high cost of leather and low prices of shoes, so that credits should be given with unusual discretion.

There is one general complaint to be noted against American leathers—they are not so closely and carefully assorted as the German market requires. Tanners in this country assort their leathers so that each grade is of uniform quality throughout. The American tanner, it is alleged, sorts his product for export just as he does for the home trade, somewhat hastily and superficially, so that good, bad, and indifferent pieces are found in the same lot. No fault is found with the present methods of packing, and American leather usually arrives in good condition.

With all the improvements that have been made during the past ten years through the introduction of American shoemaking machinery—both genuine and imitated—boots and shoes are still relatively dear in this country, and imports of factory-made shoes, generally of inferior quality, have become quite active from Italy and Austria-Hungary. There is here an obvious opportunity, which American shoe manufacturers will do well to carefully study and utilize.

HIDES AND SKINS.

Germany ranks among the foremost nations of Europe in respect to its importations and consumption of hides and skins. The imports under these categories during the first eleven months of 1895 were of enormous proportions, and are classified, according to nature and origin, as follows:

(1) *Calfskins, green and salted.*—Total imports, 10,128,140 pounds, of which 4,586,160 pounds came from France, 1,253,560 pounds from Belgium,

959,420 pounds from Sweden, 562,540 pounds from the United States, and the remainder from Denmark, Holland, and Switzerland.

(2) *Calfskins, limed and dried.*—Total imports, 19,682,740 pounds, of which 9,096,900 pounds (or nearly one-half) came from Russia, 2,907,520 pounds from Austria-Hungary, 1,449,140 pounds from Sweden, 1,901,240 pounds from Denmark, 54,560 pounds from the United States, 461,120 pounds from the Argentine Republic, and the remainder from England, Norway, Holland, and Switzerland.

(3) *Cattle hides, green and salted.*—Total imports, 105,282,760 pounds, of which 31,896,700 pounds came from the Argentine Republic, 20,523,580 pounds from Brazil, 9,967,100 pounds from the United States, 4,518,520 pounds from Cuba and Puerto Rico, 4,326,740 pounds from Uruguay, 5,261,520 pounds from Switzerland, 4,178,460 pounds from Austria, 7,196,420 pounds from France, and the remainder from Belgium, Holland, Chile, Mexico, and England.

(4) *Cattle hides, limed and dried.*—Total imports, 46,684,880 pounds, of which 22,927,300 pounds came from the British East Indies, 6,245,380 pounds from Brazil, 3,356,980 pounds from the Argentine Republic, 3,195,500 pounds from Austria-Hungary, 3,050,640 pounds from the United States, and the remainder from various other countries.

(5) *Horsehides, raw.*—Total imports, 31,610,480 pounds, of which 5,008,300 pounds came from France, 5,431,360 pounds from Great Britain, 12,030,700 pounds from the Argentine Republic, 2,017,600 pounds from the United States, 1,552,320 pounds from Austria, 820,160 pounds from Brazil, and the balance from Denmark, Belgium, and Italy.

It is impossible to ascertain the exact or even approximate quantity of hides now on hand in this district, but all authorities agree that it is far below the average supply for this season of the year. All kinds of hides are from 1 to 2 cents per pound higher in price than they were a year ago, and both dealers and tanners expect that prices will still further decline. They are therefore sailing very close to the wind, carrying small stocks and buying only what are needed for the immediate requirements of their business.

Large quantities of calfskins which were sold in German markets last spring and summer for the United States are now being offered back by American dealers at a loss of from 10 to 12 per cent on the prices then paid, and one lot of 50,000 Russian calfskins, which were thus sold at Berlin for export, have been reimported for a tanning firm at Worms. The supply of domestic cattle hides on hand and coming in is about normal, the great falling off being in importations, which will presumably be limited until the market shall become thoroughly settled and dealers are assured that bottom prices have been reached.

FRANK H. MASON,

FRANKFORT, *January 29, 1896.* *Consul-General.*

KEHL.

Owing to the close competition and the reluctance of manufacturers to give any information, I am unable to state what quantity of hides they have on hand. I do know, however, that five-eights of all the hides imported into this district come from Russia and France, one-eighth from the United States, and the remaining two-eighths from different parts of the German Empire. I am unable to ascertain what amount of leather is on hand or how much is exported, but the greater quantity exported from this consular district goes to France, the rest being consumed in Germany, with the exception of $150,736.91 in hides and skins and $70,000 in leather exported to the United States during the year ended December 31, 1895.

The manufacturers of this consular district import hides and skins from the United States, but just what quantity I am unable to ascertain. Regarding the way to increase the trade in this country, I would suggest that the American manufacturers send over salesmen, with exhibits, so that the people here can see what class of goods we make and how far superior the American products are to their own, and to advertise.

EDWARD I. PRICKETT,

KEHL, *March 19, 1896.* *Consul.*

MANNHEIM.

The present stock of hides on hand in this consular district consists of about 2,000,000 calfskins and about 8,000 other kinds of hides. Of the above quantity, about 1,998,000 are foreign and were received from Russia, Scandinavia, the United States, and Austria-Hungary, Russia and Scandinavia furnishing the greater part. About 10,000 are home product.

The present stock of leather on hand in this district is about 95,000 dozen, consisting of 80,000 dozen patent calf and 15,000 dozen of other kinds. About four-fifths of the stock of leather manufactured in this district are exported to England and her colonies, Russia, the United States, Austria-Hungary, Italy, and nearly to all other parts of the world.

In regard to the consumption of American leather, I beg to state that the following kinds have been imported into this district: Sole, colored split grained, and a very small quantity of patent calf leather. Of late, there has been a large demand for black and colored glace-kid leather.

I have ascertained that the quality of the American leather bought in this district is giving entire satisfaction, and larger purchases would be made if American manufacturers could sell at prices a little below those of German manufacturers.

I also respectfully beg to state that while ascertaining the above-mentioned information I have learned that there are about 7,000,000 calfskins and 15,000 other hides annually manufactured into leather in this consular

district. Of this quantity, 40,000 calfskins and 15,000 other hides are home product; the remaining 6,960,000 are imported from Russia, Scandinavia, the United States, and Austria-Hungary.

MAX GOLDFINGER,

MANNHEIM, *January 22, 1896.* *Consul.*

MAYENCE.

I have to acknowledge the receipt of Department circular requesting information as to the stock of hides and leather on hand in our respective consular districts; also, for information as to the consumption of American leather and how to increase same. In connection with the above, I have applied to all of the principal firms in this consular district dealing in hides and leather and was refused any information whatever, with one exception. Mr. Rothe, of the firm of George Andres & Co., of Kreuznach, kindly gave me the following: In the valley of the Nahe, from Bingen to Kirn, there are about a dozen small tanneries making sole leather from cowhides, the entire stock of which may consist of 9,000 to 10,000 hides ready for the market and about 30,000 hides in the tan pits. The bulk of this quantity are German hides, with the exception of probably 1,000 foreign hides, exclusively from South America. Business in the sole-leather line is at present very dull, and the stock of 10,000 finished hides on hand, as mentioned above, is considered to be unusually large.

There is no means of getting the desired information except from individuals and firms in this particular line, and they all seem to think the matter of the amount of their stock on hand, whence obtained, and where exported a trade secret, and that by giving any information on the subject they would be doing themselves a great injury. Furthermore, I am credibly informed that, about a year ago, the largest and richest dealers in hides in Germany formed a combination to purchase all hides coming to this country from South America and Russia, the principal countries exporting this article, and also all domestic hides as well, and to fix a price and hold it at that figure until the 1st of April, 1896. In consequence thereof, the prices have been kept up on hides, and, necessarily, leather has also increased in price. It is believed that large stocks of hides are now being held all over Germany by members of this combination, and dealers and manufacturers of leather are holding off for lower prices, buying only what they are obliged to buy to meet their immediate requirements. The fact that this combination exists may have influenced the interested parties to withhold any information on the subject of hides and leather.

As far as I can ascertain, there is little or no consumption of American leather in this consular district. As to how the same may be brought about or increased, I can only repeat what I have before stated on this subject—if Americans want to do business in this country, they must sell direct to the merchants and dealers and not trust to agents, brokers, and commission men at the seaports. All here complain of this as unsatisfactory. Our people

must do business here just as they do at home—send out their representatives and traveling men, come into personal contact with these people, advertise their goods, exhibit samples, and I am convinced the results will be satisfactory. The trade can be advanced and plenty of business done. It is my experience that where this has been done, our products have a firm foothold regardless of the fact that they are continually raising the tariff on our products and doing everything imaginable to keep us out.

PERRY BARTHOLOW,

MAYENCE, *February 28, 1896.* *Consul.*

MUNICH.

Dealers and manufacturers in this district can not be prevailed upon to give information regarding their stock of hides and leather or the quantity of their imports and exports. Attempts in this direction have proved fruitless, and the slight information obtained is incomplete and without value.

In regard to official statistics of imports and exports, I beg to make the following statement based on information obtained from the chief directing office of customs and indirect taxes in Bavaria, the royal Bavarian bureau of statistics, the Chamber of Commerce of Munich, and the chief directing office of Bavarian State railways at Munich. The official statistics of the imports and exports of Germany are compiled and published by the imperial authorities at Berlin and refer to the Empire as a whole. They contain no exact statement as to the quantity and percentage of general imports and exports of the separate states. The duty on foreign articles and productions is collected by the custom-houses on the frontier or in the interior of the Empire. After leaving the custom-house, foreign products are subject to no further control, and may, through the ordinary channels of trade, pass from one state of the Empire into others. There is no possibility of determining, by means of general statistics of foreign trade, how much of the quantity of hides and leather imported into the Empire is ultimately received by Bavaria, nor with how much of the export this Kingdom is to be credited. The royal Bavarian chief directing office of customs and indirect taxes ascertains the quantity of foreign products received by the Bavarian custom-houses, but these statistics can not be regarded as representing the total of Bavarian imports, for a considerable percentage of the imports destined for Bavaria are not shipped direct to Bavaria, but pass into the Empire on the northern or western border, enter the ordinary channels of trade, and are received by Bavarian dealers and manufacturers as German home product. On the other hand, merchandise entering the Bavarian custom-houses on the southern or eastern border, which is also that of the Empire, may leave the Kingdom and pass into other German states.

At the suggestion of the Chamber of Commerce of Munich, application for information was made to the chief directing office of Bavarian State railways at Munich. The statistical department of this office ascertains, compiles, and publishes the quantities of some of the most important articles of

merchandise that enter and leave the Kingdom by railway, giving the province or country from which the goods were received and that to which they were forwarded. These statistics, also, are of limited value in determining the actual quantity of imports and exports of Bavaria from and to foreign countries, as a considerable part of the goods arriving from Austria, the provinces of northern Germany, Saxony, and the ports on the Elbe and Weser no doubt originally came from Russia, England, and transoceanic ports. I give these statistics in detail. Those of 1895 have not yet been published, but in the year 1894, the Bavarian State railway received and shipped the follcwing quantities of hides, leather, and furs:

Imports from German provinces and ports.

Provinces and ports.	Quantity.	Provinces and ports.	Quantity.
	Tons.		*Tons.*
East and West Prussian ports	28	Saxony	730
The two Grand Duchies of Mecklenburg	5	District of Ruhr (Prussia)	3
Ports of Rostock, Wismar, Lübeck, Kiel, Flensburg, and Travemünde	12	Province of Westphalia, Lippe-Detmold, and Waldeck	81
Ports on the Elbe	150	Prussian Rhine province	502
Ports on the Weser	11	District of Saar	4
Hanover, Brunswick, Oldenburg, Schaumburg-Lippe, and Pyrmont	9	German Lorraine	9
Prussian Poland	7	Alsace	95
District of Oppel, in Silesia	7	Rhenish Palatinate	299
Breslau	14	Grand Duchy of Hesse (excepting Upper Hesse)	290
Districts of Breslau and Liegnitz, in Silesia	9	Grand Duchy of Baden	318
Berlin	110	Mannheim and Ludwigshafen	111
Province of Brandenburg	28	Kingdom of Wurtemberg and district of Hohenzollern	461
District of Magdeburg and Duchy of Anhalt	70		
District of Merseburg and Erfurt, Thuringia	368	Total (including Rhenish Palatinate)	4,328
Province of Hesse-Nassau (Prussia) and Upper Hesse	597		

Exports to German provinces and ports.

Provinces and ports.	Quantity.	Provinces and ports.	Quantity.
	Tons.		*Tons.*
East and West Prussia	15	District of Ruhr (Prussia)	15
Pomerania	5	Province of Westphalia, Lippe-Detmold, and Waldeck	41
Pomeranian ports	1	Prussian Rhine province	158
Ports of Rostock, Wismar, Lübeck, Kiel, Flensburg, and Travemünde	27	District of Saar	5
Ports on the Elbe	17	Rhine ports, Duisburg, Hochfield, and Ruhrort	1
Ports on the Weser	1	German Lorraine	1
Hanover, Brunswick, Oldenburg, Schaumburg-Lippe, and Pyrmont	170	Alsace	456
District of Oppel, in Silesia	83	Rhenish Palatinate	96
Breslau	19	Grand Duchy of Hesse (excepting Upper Hesse)	1,220
Districts of Breslau and Liegnitz, in Silesia	245	Grand Duchy of Baden	296
Berlin	128	Mannheim and Ludwigshafen	47
Province of Brandenburg	2	Kingdom of Wurtemberg and district of Hohenzollern	1,322
District of Magdeburg and Duchy of Anhalt	7		
District of Merseburg and Erfurt, Thuringia	360	Total (including Rhenish Palatinate)	5,891
Saxony	765		
Province of Hesse-Nassau (Prussia) and Upper Hesse	288		

Imports from foreign countries.

Imported from—	Quantity.	Imported from—	Quantity.
	Tons.		*Tons.*
Hungary	5	Belgium	32
Bohemia (Austria)	446	Holland	11
Austria (remaining)	919	Great Britain	1
Switzerland	376	Total	1,980
Italy	184		
France	6		

Exports to foreign countries.

Exported to—	Quantity.	Exported to—	Quantity.
	Tons.		*Tons.*
Province of Galicia (Austria)	10	Luxemburg	5
Hungary	180	Belgium	93
Bohemia (Austria)	200	Holland	31
Austria (remaining)	1,467	Great Britain	4
Switzerland	379	Total	2,506
Italy	55		
France	82		

The total imports from German states and foreign countries were 6,308 tons; total exports to German states and foreign countries, 8,397 tons.

The Munich Chamber of Commerce, in its report for 1894, states the crops of the previous year to have been poor, and, in consequence, farmers were compelled to sell more cattle than usual. As a result, the stock of hides increased, with lowered prices. Toward the end of the year, owing to a reduction of stock and also to favorable reports from America, prices showed a tendency to rise. Leather manufacturers complain that the supply still exceeds the demand.

A correspondent of the Suabian Chamber of Commerce at Augsburg writes that business in hides and leather in 1894 was dull, but that prices were steady and show a tendency to continue so in 1895.

RALPH STEINER,

MUNICH, *March 16, 1896.* *Consul.*

STUTTGART.

The information about the leather trade of Wurtemberg that I have been able to collect for the purpose of answering the Department circular is most meager. Statistics for the year ended April 30, 1894, show 3,134½ tons of hides and leather sent to other parts of Germany and 6,631 tons brought from other German states. The trade with foreign countries was confined to an importation of 1,742 tons, of which 694 were received from Switzerland and 413 from Holland.

The exports were 330½ tons, of which 233 tons went to Switzerland. The records of this consulate show leather goods to the value of $5,689.15 shipped to the United States for the calendar year 1895.

I interviewed the largest dealer in leather in this city and received the following information:

It is absolutely impossible to get at the stock of hides on hand in Wurtemberg, as, with the exception of some Java hides for overleather (kips), the tanners in Wurtemberg do not use any foreign hides, but tan only hides from cattle slaughtered in this country. Records of slaughtered cattle are kept only in a few large towns. The production of leather in Wurtemberg is insufficient for the demand, and large quantities of leather are brought from other parts of Germany, especially from Frankfort, where there is a special market for this article.

The stock of leather on hand in Wurtemberg can not even be approximately estimated. The tanners have taken advantage of the recent rise in hides and leather and have sold out their stock on hand for future delivery. Whether dealers in Wurtemberg have large stocks on hand at present, I am unable to ascertain.

I am informed that the sudden rise in hides and leather last year was caused by American speculators buying up nearly the entire stock of hides on hand in European ports. Prices have lately receded and trade is very dull.

In former years, considerable quantities of American hemlock-tanned sole leather were imported into Germany and partly consumed in Wurtemberg. Some years ago, a new process of quick tanning by means of quebracho wood and chemicals was introduced in Germany, especially in the northern part, supplying the cheaper grades of leather, so that, especially in Wurtemberg, very small and only exceptional importations of American hemlock sole leather are made. I can not obtain or give any information how this trade could be extended, except by reducing prices below the cost of producing cheap grades of sole leather in Germany. I understand a tanning firm in Buffalo, N. Y., is still making occasional small shipments of hemlock sole leather to dealers in Wurtemberg.

My informant admitted selling some leather to foreign countries, but absolutely declined giving figures or even stating to what countries sent. He blames the American Leather Trust for the present high prices and dullness of trade.

As the cheapest boots here can be had only for from $3 to $4, there would appear to be an opening for the lower grades of American manufacture.

ALFRED C. JOHNSON,

STUTTGART, *January 27, 1896.* *Consul.*

ITALY.

FLORENCE.

The leather industry of Tuscany is not without importance, although the exportation of hides is somewhat limited. The hides actually used in this district for the production of sole leather are obtained from the local slaughtering yards, while for the finer qualities of leather, Italians import the hides

from Australia and South America. Fresh skins, weighing from 65 to 85 pounds each, bring $20 and upwards. Heavy hides, almost unmarketable in Italy, command much higher prices and are usually exported to Germany and England. British India and Africa supply Italy with top hides, which, with the exception of a few good calfskins, are not obtainable in Italy.

I regret to say that the exportation of leather from the United States to Tuscany is very limited. Trials have been made recently, but the profits were not sufficiently great to encourage competition against importers of other countries. The Tuscan dealers, while they are compelled to acknowledge the fineness of American leather, object to its want of flexibility, and, more especially, its brittleness for making folds. The dark surface color and the red color of section are also not looked upon with favor.

The exportation of hides and skins from this district to the United States is shown by the following figures. These figures, however, it must be understood, apply only to dry, raw goatskins, with hair, no hides ever being exported, the strict compliance with the prescribed methods of disinfection making such exports almost impossible.

Exports of hides and skins to the United States.

Year.	Amount.	Year.	Amount.
1880	$11,511.16	1891	$10,496.20
1881	3,920.00	1892	18,454 57
1883	2,392.67	1893	27,256.73
1888	4,151.81	1894	8,950.80
1889	6,301.65	1895	11,895.90
1890	9,490.40		

I append herewith three statements, which are self-explanatory, viz:

1. Approximate imports of hides into Italy during the year 1895.

From—	Raw.	Dressed.
	Pounds.	*Pounds.*
Africa	13,000	.....
Asia (English possessions)	80,000	.....
Austria-Hungary	25,000	.....
France	35,000	7,000
Germany	14,000	14,000
Great Britain	35,000	5,000
North America	11,000	.....
South America	120,000	.....
Other countries	35,000	6,000

2. Approximate exports from Italy of raw hides during the year 1895.

To—	Quantity.	To—	Quantity.
	Pounds.		*Pounds.*
Austria-Hungary	35,000	Great Britain	130,000
France	18,000	Switzerland	5,000
Germany	20,000	Other countries	10,000

3. Rates of duty per 220 pounds on imports of hides.

Description.	Duties.	Description.	Duties.
Hides, raw, green, or dried:		Dressed hides:	
Other than for furs	Free.	Without hair	$6
For furs	Free.	With hair—	
Varnished hides	$24	Common	7
Dressed hides, without hair:		Fine	14
For soles	10	Morocco imitation hides	16
For other purposes	12		

C. BELMONT DAVIS,

FLORENCE, *February 5, 1896.* *Consul.*

LEGHORN.

Having been favored with data from private sources, I now have the honor to report, as to hides and leather, as follows:

(1) The stock of hides on hand is 62,150, of which 30,000 came from Calcutta, 9,000 from Mogador, 8,000 from China, 4,500 from Karachi, 4,500 from Bone, Tunis, Aden, and Rangoon, and 5,500 from the United States; total, 61,500 foreign hides, and 650 domestic pickled hides, or a grand total of 62,150.

(2) The annual home product is about 13,500 heavy and light weights and about 5,500 (suckling) calfskins; total, 19,000.

(3) The stock of leather on hand is not ascertainable. However, I am assured that, in consequence of the slack trade, the market is overstocked. In fact, the home production is more than sufficient for local consumption. None thereof is exported.

(4) United States leather is conceded to be of the highest grade and best quality, but too dear for this market.

ALEX. S. ROSENTHAL,

LEGHORN, *January 31, 1896.* *Consul.*

MESSINA.

In reply to Department's circular relative to hides and leather, I beg leave to report as follows:

There are in this consular district twenty establishments for the production of leather, but I regret to say that North American hides do not seem to find much favor for two reasons—one, that the freights are too high, and the other, that our terms do not suit. In 1891, the importation of calfskins, thoroughly arsenicated, from San Francisco began, and gave great satisfaction, but the dry-salted and green in brine met with very little success on account of their heavy weight and consequent heavy transportation expenses, the freight via Panama, Colon, and Marseilles being 23os. per English ton,

but subsequently reduced (and probably too late) to 120s. The shippers required payment either in cash or by confirmed bankers' credit on London. With such stringent terms, the trade decreased, the tanners preferring to pay a little more and buy as they required, at six months' credit, from importers at Genoa, Bordeaux, Havre, London, Antwerp, and Venice. These facts will explain why our exportations have so materially declined.

In 1889, the stock of hides in Messina averaged about 60,000, but it has gradually been reduced until the actual stock on hand to-day is only about 4,000, of which 1,500 are long stretched from Buenos Ayres, 1,800 saladeros Montevideo, and 700 sundries.

I append the importations for 1894 into this district, those for 1895 not yet being issued:

Imported from—	Quantity.	Imported from—	Quantity.
Dry calfskins.	*Kilograms.**	*Green salted*—Continued.	*Kilograms.**
England	16,101	England	161,324
United States	26,798	United States	16,270
Argentine Republic	4,240	*Dry.*	
Tanned refined pelts.		Austria	17,822
Austria	551	Belgium	7,540
Belgium	589	France	2,040
France	4,929	Germany	700
Germany	5,405	England	288,114
Green salted.		China	18,720
Austria	3,210	United States	23,680
France	240	Argentine Republic	105,669

*1 kilogram=2.2046 pounds.

During 1894, there were no imports of kid, lamb, and goat skins, but there were exported 39,175 kilograms (86,365 pounds) of kidskins, valued at 255,421 lire ($49,296.25), and 29,450 kilograms (64,923 pounds) of goat and sheep skins, valued at 136,353 lire ($26,316.13).

Increase of United States trade.—In reply as to how our trade in the articles in question is to be increased, I can only answer that to accomplish such a result our merchants must put themselves on the same plane as their British, French, and Belgian competitors and sell their product on the same, or even better, terms to compensate for the heavy freight and great length of time occupied in transit.

I have delayed this report in the anticipation of obtaining later statistics, which, however, I have just learned will not be available for some time.

CHAS M. CAUGHY,

MESSINA, *April 2, 1896.* *Consul.*

PALERMO.

The leather industry of this consular district is very limited. All articles into which leather enters in the manufacture are made by hand and not by

machinery. Such articles are made exclusively for the local trade and are most often made to order.

Leather is imported in small quantities from Germany, France, and Switzerland. The imports, according to custom-house statistics, into Palermo during 1894 and 1895 were 40 and 49 tons, respectively. Raw hides are imported in small quantities from England, France, Germany, America, and Japan. The imports, according to the same statistics above mentioned, into Palermo during 1894 and 1895 were 87 and 57 tons, respectively.

I have been informed by the chamber of commerce, after endeavoring, without success, to find out from local dealers the stock on hand, that it is impossible to determine, even approximately, the stocks of raw hides and leather on hand in Palermo alone, to say nothing of the district. But from what has already been said, it is not probable that the quantity is a significant one.

As in the case of other merchandise, the importation from the United States would, it is believed, be increased if the same terms as to time of payment were accorded by American exporters as by the exporters of other countries.

WILLIAM H. SEYMOUR,

PALERMO, *February 10, 1896.* *Consul.*

ROME.

The chamber of commerce of this city has been unable to give the stock of hides on hand. This stock, however, must be insignificant. Rome derives its supply of hides and leather in part from the provinces of Italy, particularly Turin, Genoa, Milan, and Naples, in part from foreign countries, and, lastly, to a small extent, from the local butcher pens and tanneries.

The following table shows the quantity of leather brought into Rome from foreign countries during the year 1895:

Imported from—	Quantity.	Imported from—	Quantity.
Tanned leather, with hair.	*Pounds.*	*Tanned leather, without hair.*	*Pounds.*
France	503.8	France	523.6
Germany	1,471.8	Germany	55
Finished leather.		*Patent leather.*	
Austria	92.4	France	4,195.4
France	8,786.8	Germany	1,504.8
Germany	15,085.4	Switzerland	638
Great Britain	543.4		
Switzerland	2,094.4		

It is not possible to state what the annual production of raw hides in Italy is. It can only be remarked that the consumption of meat having increased of late years, the quantity of hides has necessarily increased in the same proportion.

The ever-increasing importation of raw hides shows that the tanning industry is assuming greater importance and the abundance of tanning material (oak bark, sumac, etc.), in which Italy is rich, contributes to this end. This industry, in fact, has been largely developed of late years, and although Italian tanners can not as yet boast of the most improved methods, they turn out a product that is beginning to be much appreciated abroad, especially in Austria.

Sole leather is the most important article of export, but other varieties of leather are also exported, namely, calfskin, saddler's leather, patent leather, and colored sheep and goat skins. Leather belting is now being manufactured with success. The total number of tanneries in Italy is about 1,270, employing 13,500 workmen.

The following tables show the imports and exports of hides and leather into and from Italy for the years 1891–1895.

Italian imports of hides and leather.

Imported from—	1891.	1892.	1893.	1894.	1895.
Raw hides.	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
Austria-Hungary	3,415,280	2,128,500	3,017,080	2,164,800	2,916,540
France	3,801,380	4,053,940	4,234,560	3,294,720	3,444,320
Germany	1,763,740	1,629,980	1,096,260	717,200	1,487,200
Great Britain	5,171,760	6,475,480	4,381,300	4,735,060	3,853,740
Asia (British co onies)	6,743,220	4,316,620	5,628,700	15,825,040	8,483,860
Africa	857,340	856,900	945,340	2,080,760	1,637,240
North America	2,947,780	2,576,200	2,581,480	2,392,500	1,222,320
South and Central America	13,080,100	14,943,280	17,222,920	20,500,480	14,353,240
Other countries	2,480,280	2,781,240	2,647,920	2,394,260	3,819,860
Total	40,260,880	37,762,140	41,755,560	54,104,820	41,218,320
Leather.					
France	1,199,660	1,199,880	838,260	837,760	752,620
Germany	1,746,360	1,716,000	1,749,440	1,465,420	1,542,860
Great Britain	428,560	401,060	320,980	329,120	510,620
Other countries	539,220	485,540	587,400	757,020	615,120
Total	3,913,800	3,802,480	3,496,680	3,389,320	3,421,220

Italian exports of raw hides.

Exported to—	1891.	1892.	1893.	1894.	1895.
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
Austria-Hungary	4,735,060	5,835,060	5,813,720	5,166,700	4,120,160
France	2,405,040	1,571,900	1,758,240	1,651,540	2,214,740
Germany	2,515,480	1,318,460	1,342,220	1,343,980	1,947,440
Great Britain	5,167,360	5,113,240	7,942,440	8,515,540	14,023,460
Switzerland	439,340	346,280	278,960	321,420	473,660
Other countries	2,093,740	579,700	379,940	845,680	1,089,000
Total	17,356,020	14,764,640	17,515,520	17,844,860	23,868,460

The mean export prices of hides and leather per quintal (220 pounds) for the years 1893 and 1894 were:

Description.	1893.	1894.
Raw hides	$19.30	$19.30
Calfskins	56.00	49.21
Sheep and goat skins	27.40	29.00
Lamb	89.35	86.85
Kid	125.83	115.80
Sole leather	56.00	54.04

The total value of hides and leather exported from Italy in 1893 and 1894 was:

Description.	1893.	1894.
Raw hides	$1,203,741	$1,191,446
Calfskins	117,201	86,224
Goat and sheep	44,041	39,806
Lamb	728,633	801,538
Kid	563,494	569,967
All other	20,626	38,040
Sole leather	477,490	571,689

The total value of hides imported into Italy during 1895 was $9,515,593.83.

Roman wholesale dealers do not import leather from the United States, for the reason, so they say, that its cost is too great, and, further, that it is not very well finished.

WALLACE S. JONES,
Consul-General.

ROME, *March 19, 1896.*

TURIN.

During the past year, which did not differ much from the business done in former years, the divers tanneries in the province of Piedmont had under treatment about (1) 150,000 calf hides, nearly 90 per cent of which came from Germany, Bohemia, Russia, and Sweden, the remainder from the butchers in this province and from the French valleys of Haute-Savoie; (2) 30,000 oxhides of all sorts, coming from South America (Buenos Ayres), Australia, Cape of Good Hope, Germany, Bohemia, and Austria proper, and again from this province and Haute-Savoie; (3) 60,000 cowhides, coming from British India, Calcutta, Dacca, etc.

An average stock of finished leather, all sorts, in price and quality, of about $80,000, was held, while the yearly turnover amounted to $800,000 and more.

The products, all of fine quality, are sold on the markets of London, Spain, Italy, European and Asiatic Turkey, Austria-Hungary, Roumania, Bulgaria, Servia, and Greece; also, China and the West Indies. How much of the leather was shipped to the different countries it is impossible to give in exact figures, the consumption being seemingly in proportion to the size of the country the leather was sent to.

I can not omit mentioning the establishment of Giuseppe Durio, one of the largest, if not the largest, tannery of southern Europe, situated at Madonna di Campagna, just outside of the city limits. Here was done more than 60 per cent of the business, as stated above. The works extend over an area of 32,000 square meters, giving employment to 400 persons. It is a complete establishment of its kind—a little world in itself. The firm has been in existence for many years, and it combines conservative business methods with a push and energy rarely found among Europeans.

The United States exports largely articles which are not made here. The affairs are conducted by representatives of American houses doing business chiefly in Milan, Turin not having an American agency. The exporters are Messrs. T. H. Foerderer, of Philadelphia, Pfister & Vogel Leather Company, of Chicago, and the United States Leather Company, of New York.

The leather exported from the United States comprises cow leather, black and colored; calf leather, varnished and colored; also, goat and kid, black and colored. As the importation into this province is indirect, by way of Milan, I can not furnish any figures. The American production, however, stands far ahead of the English goods.

In conclusion, I have the honor to call the attention of the Department to a Turinese invention of late date, styled the "quick-tanning process," which may revolutionize tanning throughout the world. This process, based upon simple improvements on the old system, without the help of noxious ingredients, permits of tanning perfectly any sort of hide in as many days as it used to take months under the old tanning system, which required six months. I am informed that the United States, as usual foremost in all enterprises of this kind, has already adopted the process.

W. E. MANTIUS,

TURIN, *February 4, 1896.* *Consul.*

NETHERLANDS.

ROTTERDAM.

It is difficult to arrive at a just estimate of the stock of hides on hand in the Netherlands. Official figures are not obtainable, and no statistics on the subject seem to exist. Even estimates are difficult to obtain, as most persons interested in hides plead ignorance on this subject.

The following statement has been taken from the "Annual hide and skin circular for the Amsterdam and Rotterdam market" for 1895 and shows the

stock of foreign hides on hand on the 1st of January, 1896, in Amsterdam and Rotterdam, the only hide markets in the Netherlands:

Dry Java Atjih and Sumatra ox and cow hides	35,400
Dry Java buffalo hides	24,000
Dry East India ox and cow hides	450
Dry Singapore buffalo hides	2,800
Dry Buenos Ayres hides	1,165
Salted Buenos Ayres hides	1,300
African hides	320
Java horsehides	428
Java goatskins	20,900
Java bastard goatskins	7,600
Java deerskins	350
Goatskins of other countries	14,300
Java lizard leguan skins	25,500
Total	134,513

The same circular gives the imports for the year 1895 as follows:

Dry Java and Sumatra ox and cow hides	280,100
Dry Java buffalo hides	183,200
Dry East India ox and cow hides	1,150
Dry Singapore buffalo hides	16,700
Dry Buenos Ayres hides	2,800
Salted Buenos Ayres hides	3,800
African hides	1,520
Venezuela hides	350
Java horsehides	1,600
Java goatskins	501,000
Java bastard goatskins	38,500
Java deerskins	8,800
Arabian goat and sheep skins	16,200
Cape goat and sheep skins	8,300
Goatskins of other countries	98,000
Java lizard leguan skins	48,700
Total	1,210,720

But, in connection with this last report, I have been informed that besides the hides therein mentioned, hides and skins are imported in a private way and in private deals. It is very difficult to give reliable figures of such private importations. It is estimated, however, that from 15,000 to 20,000 dry German ox and cow hides are annually imported by about five firms, of which two are Rotterdam firms, and that some 30,000 foreign calfskins are imported privately.

The tanners in the south of the Netherlands buy privately during the year from 75,000 to 100,000 South American hides in Antwerp and Havre and about 20,000 to 40,000 hides, mostly dry Cape or African hides, at London sales. I can not state what they bought in 1895, but it is estimated that not more than 75,000 South American hides were purchased in Antwerp and not more than 20,000 hides at London sales.

Figures as to the stock of Dutch hides and skins on hand must be merely tentative, as the trade in these commodities is in the hands of a large number of merchants and salters, salting and exporting in a private and sometimes even secret way.

Messrs. Brummer & Co., of Amsterdam, estimate the stock in the Netherlands to be, on January 1, 1896: Ox, cow, and bull hides, 50,000 to 70,000; calfskins, 40,000 to 50,000; sheepskins, 40,000 to 50,000; horsehides, 30,000 to 35,000.

Messrs. Van Straaten & Edersheim, of The Hague, estimate the stock of ox, cow, and bull hides at 40,000 to 50,000, not counting the hides in the hands of the tanners, of which they can not furnish an estimate.

Messrs. Brummer & Co. estimate that from 250,000 to 300,000 bull hides, 200,000 to 250,000 calfskins, 200,000 to 250,000 sheepskins, and 30,000 to 40,000 goatskins are annually produced in Holland.

There being no leather market in the Netherlands, dealers say that it is impossible to state the stock of leather, all of it being in the hands of dealers and manufacturers. There is no export trade in the article. All the leather manufactured here is for home consumption. Last year, as an exception, a lot of sole leather was sold to Belgium and France in consequence of the sudden rise in prices.

The principal branch of leather manufactured in the Netherlands is that for boots and shoes. The kinds manufactured for this branch are: Sole leather in all qualities and horse leather in good and cheaper selections for uppers; also, domestic heavy calf and cow hides, not well finished, for ordinary workmen's boots. The upper leather manufactured here is principally used for inferior goods; the better lines of upper leather used, as waxed calf, calf kid, enameled leather, colored lining leather, satin hides, etc., are imported. Heavy leather for bellows and the like is also manufactured. Black and brown kips are made of Java, Calcutta, and other hides.

Saddler's articles are mostly imported, ready made, from England and Germany. The only kinds of leather used in that line are enameled hides (also imported) for carriage roofs and black and brown leather for reins, etc., which kinds are manufactured here only in cheap qualities and principally for repairing.

Mr. G. Czerwinsky, a representative leather dealer and importer of Rotterdam, who has kindly furnished me with information regarding leather, estimates that there are six hundred tanners and curriers in the Netherlands, producing from 200 to 6,000 hides of sole leather each a year. Some of these tanners are shoe manufacturers, tanning for their own use. It is probable that some 300,000 hides are tanned annually, which, perhaps, is sufficient for domestic consumption.

The Netherlands imports for consumption, from Germany, Bavarian calf and goatskins, enameled leather, and satin hides; from France, first qualities of waxed calf, goat, and glacés for stylish boots, but principally sheepskins for linings; from England, light calf, levant kips, enameled hides for

carriages, and bellies of sole leather; from Belgium, some sole leather, mostly in bends, and a little choice horse leather; from the United States, principally black satin hides and pebble, either directly or through English and German firms.

Mr. G. Czerwinsky writes in regard to the American leather:

That kind of leather was practically unknown some years ago, but lately, the use of it has increased considerably and amounts now to some 10,000 hides a year, imported directly. For pushing the trade in American leather, I would think it best to establish a stock here and to engage a dealer residing here, well acquainted with the consumers, to dispose of it. People here are conservative, and in order to introduce an article, the manufacturer has to quote very low prices, and must, perhaps, at the start, sacrifice all profit. When the article is once known and found to be good, a regular trade can be relied upon. The quality of American leather is better than, or as good as, the quality of the German, French, or any other, and for introducing, lower prices are quoted. I do not see, therefore, why the American article should not sell as well as the beforementioned. If there is a profit for the consumer, he does not ask where the leather is manufactured, and I think that if I attempted it, I could do a relatively big trade—the country not being large—in American leather, as my firm (J. Czerwinsky & Co.) is well known throughout the Netherlands.

American leather manufactured from buffalo hides is used both by saddlers and carriage builders and also for furniture covering.

Messrs H. G. Aikema & Co., of Rotterdam, think that seven-eighths of the japanned leather imported into the Netherlands from the United States is exported again to other European countries, as Germany, Austria, and Italy, and to the Dutch colonies. They also state that the rise in leather prices has, no doubt, made the imports of American leather for 1895 less than usual.

In conclusion, I would add that American sole leather, which is vastly superior to the sole leather ordinarily used here, ought to find a good market in Holland, if its qualities were once known.

AIRE H. VOORWINDEN,

ROTTERDAM, *March 11, 1896.* *Deputy Consul.*

NORWAY AND SWEDEN.

BERGEN.

There is rarely any stock of hides of importance in this country, as this article is bought, so to speak, for use day by day either at the large continental staple places or imported direct from South America. At the beginning of the year the stocks of leather on hand in Norway were smaller than usual. The consumption of American leather is therefore not expected to decrease in 1896. About three-fourths of the consumption of sole leather in Norway is imported from the United States; any increase thereof is not probable. It is stated that the American upper leather is not so suitable as the Norwegian product, which is chiefly made of Norwegian hides, with Norwegian tan. This makes the latter cheaper than the American upper

leather, which, besides, pays a duty in Norway of 35 öre (9 cents) per kilogram (2.2046 pounds), while sole leather only pays 23 öre (6 cents) per kilogram.

J. C. ISDAHL, JR.,
Vice-Consul.

BERGEN, *January 22, 1896.*

CHRISTIANIA.

The tanneries of this district are but very few and of no importance. It is only in some of the cities on the western coast of Norway and at Drontheim, in the north, that this industry has developed on a large scale. About 1,300 persons are considered to be engaged in this industry all over the country.

There is at present no stock of hides on hand and the tanneries are believed to have about 10,000 hides under preparation. According to the last official statistical tables, the hides which were imported into this country in 1894 amounted to about 1,600,000 kilograms, the most of which came here from Germany, Belgium, Denmark, and France, and came doubtless originally from Argentina. The value of dry hides is given by the statistics at 33 cents and of raw hides at 19 cents per kilogram (2.2046 pounds), showing a total value of imported hides of about $350,000. No duty is imposed on hides.

Hardly any stock of leather, either foreign or domestic, is now on hand and only 4,000 or 5,000 hemlock sides are left at the dealers' warehouses. Norway imports yearly about 2,000,000 kilograms of leather, which is almost exclusively American hemlock leather. The value is estimated at about $900,000. Only half the imported leather comes here direct from the United States; the remainder is imported via England and Hamburg. The American leather has, on account of its cheapness, gradually superseded all other kinds of leather in this country, and a not inconsiderable quantity—nearly 400,000 kilograms—is every year reexported to Sweden, which country also imports from Norway about 300,000 kilograms of home product. The duty on leather is nearly 6 cents per kilogram (2.2046 pounds).

The trade in leather with the United States is here in the hands of intelligent and active business men, who occasionally go to America to study the market and visit the dealers there. It would, in my opinion, be unnecessary to devise any means to promote the consumption of American leather here, where it already ranks higher and sells better than products of other countries. The North German so-called quebracho leather has lately been introduced into this and other European markets, competing with the American leather, but I understand that it has not yet proved a success here.

GERH. GADE,
Consul.

CHRISTIANIA, *February 1, 1896.*

GOTHENBERG.

The Swedish statistics are in many respects somewhat defective; it is therefore difficult to obtain reliable information on this and several other subjects, and consequently the figures given below are only approximately correct.

I think that the stock of hides now on hand in this consular district amounts to about 30,500. Of these, about 1,500 are from South America, about 21,000 (kips) from the East Indies, and about 8,000 collected in Sweden.

I believe that the stock of sole leather in this district amounts to about 32,000 halves. Of these, probably 22,000 are of American, 6,000 of Swedish, and 4,000 of Norwegian manufacture.

Sole leather of Swedish manufacture is not exported. Still, if one looks through the Swedish statistics on the subject, it seems as if such export took place. This is because sole leather is sent in transit through Sweden to Russia and to Norway; but these quantities are not large.

With a few exceptions, such as bellies and backs for belting, of which small quantities are imported from England, the sole leather is imported from the United States. In spite of this, the Swedish statistics do not show any import of leather from the United States. The reason of this is that the goods go via Hull, Hamburg, and Copenhagen, and thus in the official statistics come under the heading of imports from England, Germany, and Denmark.

Besides the American leather, considerable quantities of Norwegian oak-tanned sole leather is imported. The import of American sole leather began about 1870. Compared with Swedish leather, it is considered to be inferior to the leather from the large tanneries in Sweden, but superior to the leather from the more numerous country tanneries, which, although they produce a pretty good leather, can not give this a good appearance.

In order that the American leather may successfully compete here with the Swedish, it is claimed by the merchants here that it should not only be cheaper, but also lighter. Such as it now is, the price per kilogram (2.2046 pounds) of American leather, in spite of a duty of about 15 per cent, is about 20 per cent less than for Swedish or Norwegian leather. This is because a square inch of American leather, of the same thickness as a square inch of Swedish leather, is considerably heavier. The reason of this, I am informed, is that the American leather is hemlock tanned and the Swedish oak tanned. Imports of American oak-tanned leather have been tried, but have failed because this leather, though good, was too expensive.

American leather for uppers is not imported in large quantities; and on the whole, only very small quantities of specially fine uppers are imported, but are made here. This is on account of the high duty on leather of this kind. Only small quantities of this are exported to Norway and Denmark.

The official statistics show the following figures for the whole of Sweden:

Imports.

Description.	1890.	1891.	1892.	1893.	1894.
	Kilograms.	*Kilograms.*	*Kilograms.*	*Kilograms.*	*Kilograms.*
Raw hides	3,788,867	3,821,447	2,753,104	2,340,102	3,213,000
Sole leather	2,304,590	2,350,537	2,128,917	2,287,679	(*)
Upper leather	317,543	316,196	333,677	421,409	(*)

* Not reported yet.

Exports.

Description.	1890.	1891.	1892.	1893.	1894.
	Kilograms	*Kilograms.*	*Kilograms.*	*Kilograms.*	*Kilograms.*
Raw hides	1,724,861	1,869,729	1,648,401	7,851,843	2,087,000
Leather	11,901	21,713	18,319	26,166	(*)

* Not known.

Considerable quantities of Swedish hides are sold to the United States, but they are not shown in the official statistics, and, for above-named reasons, they appear in the exports to England, Germany, and Denmark.

The declared value of hides exported from this consular district to the United States during 1895 amounted to $46,136.25.

The merchants here complain that the latest strict regulations regarding the disinfection of hides intended for shipment to the United States will altogether stop this export, as the hides, it is claimed, are damaged by the method of disinfection prescribed for moist hides and skins.

A great deal of the Swedish export of hides goes to France, where the Swedish hides and skins, in consequence of their fine grain, are used for the finest kinds of uppers.

OTTO H. BOYESEN,

GOTHENBERG, *February 3, 1896.* *Consul.*

RUSSIA.

RIGA.

In this district there exist, besides several smaller tanneries, about ten larger steam tanneries, producing about $5,600,000 worth of leather yearly. The greater part of this quantity consists of domestic hides and the balance of South American, and the whole production is for home consumption.

The export of skins (chiefly dried calfskins) from this consular district to the United States during the year 1895 amounted to $115,000.

Under these circumstances, any increase in the consumption of American leather here can hardly be expected; besides, the import duty on leather is rather high in comparison with raw hides.

N. P. A. BORNHOLDT,

RIGA, *January 28, 1896.* *Consul.*

ST. PETERSBURG.

To make even an approximate estimate of the stock of hides and leather on hand in Russia is impossible, from the fact that the leather industry has no bureau of statistics nor any office where records of the trade would be kept, and from the further fact that the leather industry in this country is not confined merely to regular tanneries, but is also carried on and widely spread among the village inhabitants. In 160 districts there are 9,500 householders occupied with it, who produce about 28 per cent of the output of the factories, and yet these do not include such persons as are employed in tanning sheepskins used for clothing in the villages, who are a separate class confined to 137 districts.

In trying to ascertain the stock of hides and leather on hand in this country, I met at every tannery and every business house I called with one reply, "That is impossible to state." But to the question of what percentage of foreign hides and leather is used in Russia, nearly all agreed on 25 per cent.

The largest and most important hide and leather market in Russia is in Nijni-Novgorod. Tanners and leather dealers of any importance in this country buy their stocks there. I have received official figures of the whole hide and leather business transacted in that town in 1895, which may serve, in connection with the amounts produced, imported, and exported, which will follow herein, as a basis to make an estimate.

The total business transacted in raw undressed leather in Nijni-Novgorod in 1895 did not exceed 3,741,325 rubles ($1,926,782). Cattle hides were sold to the amount of 1,100,000 rubles ($566,500); steer hides, 87,000 rubles ($44,805); horsehides, 658,000 rubles ($338,870); calfskins, 330,000 rubles ($169,950); hides from cattle carcasses, 109,500 rubles ($56,393); Russian sheepskins, 541,500 rubles ($278,873); Calmuk sheepskins, 560,000 rubles ($288,400); goatskins, 211,575 rubles ($108,961); and camel hides, 143,750 rubles ($74,031).

The quantity of raw hides brought to the market and prices paid were as follows: Cattle hides, 248,000 pieces sold at from 8.10 to 12.50 rubles ($4.17 to $6.44) per pood, to the amount of 1,240,000 rubles ($638,600); steer hides, 50,000 pieces, at 12 rubles ($6.18) per pood, 97,500 rubles ($50,213); horsehides, 140,000 pieces sold at from 4.39 to 5.10 rubles ($2.75 to $2.63) per piece, 658,000 rubles ($338,870); calfskins, 400,000 pieces, from 14 to 16 rubles ($7.21 to $8.24) per pood, 330,000 rubles ($169,950); cattle carcasses, 200,000 pieces, 9 to 10 rubles ($4.65 to $5.15) per pood, 109,500 rubles ($56,403); Russian sheepskins, 600,000 pieces, from 90 copecks to 1 ruble (46½ to 51½ cents) per piece, 541,000 rubles ($278,615); Calmuk sheepskins, 1,000,000 pieces, from 50 to 90 copecks (25.7 to 46½ cents) per piece, 700,000 rubles ($360,500); goatskins, 217,000 pieces, from 90 copecks to 1.05 rubles (46½ to 54.07 cents) per piece, 211,575 rubles ($108,961); camel hides, 25,000 poods, 5 to 6.50 rubles ($2.57½ to $3.35) per pood, 143,750 rubles ($74,031).

On account of an early departure of the buyers, part of the cattle and steer hides and of Calmuk sheepskins remained unsold. The prices of horsehides, camel hides, and calfskins differed from last year's prices. For instance, horsehides, owing to an increased demand from abroad, sold 37 per cent higher and camel hides advanced 20 per cent, but calfskins dropped 17 per cent and carcasses 21 per cent. One thing was noticeable at the Nijni-Novgorod markets—the increase of hides and skins from the previous years, which was caused by the opening of a part of the Great Siberian Railway. The sales of dressed leather amounted to 1,812,000 rubles ($933,180); of calfskins, 80,000 rubles ($41,200); and of sheepskins and morocco leather, 305,000 rubles ($157,075). The hides and leather are imported into Russia from Hamburg, Antwerp, Havre, the United States, and some from London; but the greatest bulk comes from Hamburg.

The latest statistics are for 1894, showing the following imports:

Description.	Quantity.	Value.
	Tons.	
Leather and hides, wet salted	19,735	$3,075,065
Undressed leather and hides, dry and dry salted	7,585	1,638,215
Large hides, tanned and dressed	614	368,225
Small hides, tanned and dressed	90	138,353
Varnished leather	90	133,900
Morocco, redskins, shagreen, etc	235	399,125
Other leather, cut for boots and shoes	11	32,960

Russia exports only light leather, mainly to England and Germany; all heavy leather manufactured in Russia remains in the country. The goat, calf, and sheep skins, in brown and black colors, are nearly all exported to England. Russia exported during 1894 the following:

Description.	Quantity.	Value.
Undressed hides:	*Tons.*	
Small	5,146	$1,459,925
Large	578	110,625
Sheep and goat skins	3,462	1,296,770
Cuttings of raw leather	199	9,875
Russia leather	163	146,260
Other dressed leather	272	190,550

Statistics showing the number of tanneries in Russia, with the number of hands employed and the value of products, have been completed only to 1893, and give the following figures: In European Russia, there were 1,538 tanneries, employing 17,498 men, with a production of 28,872,000 rubles ($14,869,080); in the Caucasus, there were 79 tanneries, employing 600 men, with a production of 1,038,000 rubles ($585,070); in Siberia and Turkestan, there were 273 tanneries, employing 1,955 men, with a production of 2,663,000 rubles ($1,371,445). The village leather industry is carried on with primitive processes and the old-fashioned style of wrought leather. The methods practiced by them are very simple, even crude; they have

rarely a workshop, but content themselves with the cottage in which they live. The vat used for steeping and tanning the hides is placed in the street and the hides are kneaded and greased at home. The work is generally carried on by the members of the family, and their instruments are likewise imperfect. Only the more well-to-do peasants hire workmen, who generally live with the family and receive from 55 to 60 copecks (28 to 31 cents) per day. Again, in some places, as, for instance, in the Chernikov districts, the peasants club together to buy material and work in common. The profits accruing from this trade are not very large. In the Viatka district, they amount to about 5.5 to 6.5 per cent clear profit on their gross receipts. The highest profits are realized by those who do piecework for the large manufactories, hides and material being found. In the government of Moscow, a cottager, assisted by a family of three persons, will dress hides to the value of 1,800 rubles ($927) a year, and make 13 per cent clear profit.

In making inquiries as to how the American leather trade could be increased in this country, I had occasion to satisfy myself how hard it is for the American tanners to compete at existing prices with the Russian tanners. The duty on leather in Russia is very high—6 rubles in gold per pood ($4.63 per 36.112 pounds). Through the kindness of a well-known firm here (one of the largest leather dealers), I was shown their books, in support of their statement to me, showing a purchase of 100 bundles of leather from the United States. The purchase price paid was 17,536 rubles; the amount paid for duty, freight, and cartage was 16,150 rubles, so that the expense of laying the lot down in St. Petersburg was nearly as much as the leather cost.

Although every dealer here admits the superiority in finish and style of American leather, giving it preference to the Russian, it is claimed that on account of heavy expenses of getting it here, it is difficult to bring it into successful competition with Russian leather. To-day's price of Russian heavy sole leather, prime quality, is 22.50 rubles per pood ($11.58 per 36.112 pounds), for which price, it is claimed, American leather of the same quality can not be sold. Consequently, as long as the present high duty on leather remains in Russia, there will be no prospect for an increase of the American leather trade in this country.

JOHN KAREL,
Consul-General.

ST. PETERSBURG, *January 23, 1896.*

SPAIN.

BARCELONA.

Hides are divided into two classes in Spain; the first are called "cueros," which are obtained from full-grown cattle and weigh from 10 to 15 kilograms,* and the second are called "pieles," and are taken from young cattle and weigh from 1 to 2 kilograms.

Usually, Spain does not export hides to any great degree, but the prices were so high during 1895, and the supply on hand happened to be so large,

*1 kilogram=2.2046 pounds.

that advantage could easily be taken of the great demand for them in foreign countries, and, consequently, they were exported in large quantities to England, Ireland, Germany, and also, either directly or indirectly, to the United States. The profits made by the Spanish dealers during 1895 were from 25 to 50 per cent, while in normal times they amount to from 10 to 20 per cent.

Usually, the demand for hides in Spain is very much greater than the supply, and large importations are made from South America and India. The native hides are considered the best, those of South America next best, while those from India stand at the bottom of the list.

The dealers sell to the tanners generally their entire supply, and the tanners furnish the market with all the leather that is required, except a small quantity of the finest kind of leather, which is imported from France, England, Germany, and Italy.

The duties on hides are 7½ pesetas ($1.40) per 100 kilograms (220.46 pounds), and on leather from 1.6 to 3¼ pesetas (31 to 63 cents) per kilogram (2.2046 pounds), according to the kind and quality.

Barcelona is the principal hide and leather market of Spain. Of the ten dealers here, six receive their hides from South America and four from India. The hides are either arsenic or salt cured, as a rule. Those from India have lately been sent with an additional treatment of naphthalene to preserve the hair from moths. The supply of hides on hand is 50,000, but 16,000 more are due here at the end of this month, and by the 5th of February 50,000 or 60,000 more will have arrived from Rio de la Plata. Outside of Barcelona, the foreign supply of hides is about 25,000.

The usual stock of leather on hand in Spain ranges from 400,000 to 500,000 pieces of from 5 to 7 kilograms in weight each.

HERBERT W. BOWEN,

BARCELONA, *January 22, 1896.* *Consul-General.*

UNITED KINGDOM.

BIRMINGHAM.

This consular district being in the interior and covering a large area, it would not be possible to ascertain the stock of leather on hand, or its origin, as it is kept in great warehouses in London, far more than is the case in the United States. The only great center for the manufacture of boots and shoes is at Northampton, which is 54 miles away, so that knowledge of its demands is hardly possible.

Upon careful investigation, I find that very little leather of any kind is now used in finishing railway carriages, the first-class vehicles in which it was formerly employed being used comparatively little. Most of them are now finished in textiles of some sort, but leather is still used to some extent in the finishing of dining carriages, which are coming into fashion more and more each year.

The use of leather has also declined in the furniture trade, velvets and

other textiles taking its place, even in dining-room suits. Manufacturers of fine furniture tell me that they do not now use one skin of morocco leather in their business where a dozen were called for ten years ago. When leather is employed at all, it is of the finest quality.

In the carriage trade, leather is employed as largely as ever. Most of it is procured from London in quantities as wanted, and is, I am assured, mainly of American manufacture.

GEORGE F. PARKER,

BIRMINGHAM, *March 20, 1896.* *Consul.*

BRADFORD.

In response to the Department circular asking for information as to the stocks of leather and hides held in this district and whether it is of home or foreign production, I would state that I have made over one hundred inquiries. From the replies received, it is evident that one-half of the dealers in this consular district handle only leather offal and kip. Though this is not essentially a leather-producing or leather-working community, I am informed through answers to questions asked that the stock of hides now on hand among regular dealers is 130,000. Of this number of hides, 6,000 are foreign and came from the East Indies. None are imported from the United States, save a few tons when the price of hemlock sides and offal is high here. The balance of 124,000 hides is therefore of English production.

The stock of commercial leather now on hand in this vicinity is valued, at current wholesale prices, at $347,000. A very small proportion of the hides and leather tanned and produced in this district is shipped to the United States and the continent of Europe; the great bulk is for home consumption.

Very little seems to be known about American leather here, and that little is not favorable. The only way to increase the consumption of American leather would be for our leading firms to send out representatives with samples of good quality and make an endeavor to convince importers and merchants of its utility.

CLAUDE MEEKER,

BRADFORD, *March 6, 1896.* *Consul.*

BRISTOL.

It would be impossible to give the stock of hides on hand at any given moment in Great Britain, as statistics are not obtainable. Generally speaking, however, the stock of raw material is not in excess of the demand. The shortage of stocks which, last spring, resulted in the great advance in values, has not yet been made up, and at the present moment, there is no surplus stock of hides of any description, either imported or English.

The stocks of leather in England at the present moment are practically below the average, and this is due to several causes. During the period of

excessive inflation last summer, English tanners did not put as many raw hides into their tan pits, and any surplus was principally exported to the Continent and also to the United States. The time is now coming round when English tanners must be expected to feel the pinch and restricted production of leather will follow. The quantity of leather, exported as leather, from England is, comparatively speaking, small. The import naturally greatly exceeds the exports, but there is a large export trade done in manufactured boots and shoes.

With regard to leather from the United States, this branch of the business is now thoroughly understood on the two sides of the water. Representatives of the leading houses in Great Britain are constantly crossing and recrossing, as are also representatives from the leading eastern houses in the leather trade. It is thought generally by English importers that the business has been increased to its full capacity. The principal business is done in hemlock sole leather from New York and Pennsylvania, and there is also an import of patent harness and furniture leather, largely made in Newark, N. J. Up to the present time, English manufactured goods of this sort are quite as cheap, if not cheaper, and the consequence is, there has been no great trade done. There is a large quantity of rough split leather imported into England from Newark, and quite a considerable quantity of patent hides, calf, and glacé kid is imported from Wilmington, Del., and Philadelphia.

There is some import of oak leather from Kentucky, Ohio, and Indiana, and a small trade has been done in curried harness leather; but the cost of freight from the interior to the seaboard militates against this business. English tanners have a plentiful supply of oak bark, and hides are quite as cheap as in America; consequently, the competition of domestic tanneries in England has been too keen to allow of any great importations. This branch of the business has been pushed exceptionally hard during the past three years by the leading importing houses in England, but up to the present time they have not met with great success. California leather has been imported in small quantities when the market has been considerably below the English market for a similar class of stock, but this leather has not taken the market, and it is said that it will not be likely to do so, as it is not sufficiently solid and firm for the British requirements.

Generally speaking, the raw-hide trade in England, Antwerp, South America, and New York is in the hands of men who are in constant touch, and those conducting the business in the United States are thoroughly conversant with its ins and outs over all the world.

LORIN A. LATHROP,

BRISTOL, *February 21, 1896.* *Consul.*

DUNDEE.

No direct importations of either hides or leather are made into Dundee, and no stocks are held here other than what are required for the ordinary purposes of the trade; nor are goods of this class exported except in occa-

sional small lots, so that it is impossible for me to give any information in answer to what appears to be the chief objects of the inquiry.

The principal centers at which American hides are imported into Great Britain are the ports of Liverpool, London, Bristol, Leith, and Glasgow. The importations into Scotland, however, are insignificant, and at the three towns of Glasgow, Aberdeen, and Leith, the only places in Scotland at which markets for the sale of hides are regularly held, the product is almost entirely that of native cattle. A very considerable rise took place in the prices on the Glasgow market in the beginning of last year, and was maintained for some time, until toward the end of the year the normal prices were reached. This advance, I am informed, was caused by a shortness in the supply of hides in the United States, which necessitated American dealers buying abroad to meet their requirements.

Besides raw hides, dressed leather is largely imported into this country at the above-mentioned ports. It is estimated that from a third to a half of the leather used in the boot and shoe trade, which is the principal leather-consuming industry in this country, is of American origin; and probably this proportion would be largely increased if the leather were put into the market in better condition in regard to color. At present, the hemlock process followed in tanning the hides gives the leather a red color, and while the material itself is, in all other respects, equal in quality to native-tanned leather, yet this red color, together with the fact that it sells at a cheaper figure, causes American leather, treated by this process, to be looked upon with suspicion as an inferior article, and largely prejudices its sale. This fact is evidently known to tanners in the United States, as, recently, there seems to have been an effort made on their part to more nearly approach the color of the native leather in preparing goods for export.

JOHN M. SAVAGE,

DUNDEE, *February 13, 1896.* *Consul.*

GLASGOW.

There is at present no stock of hides on hand in Glasgow in first hands, *i. e.*, of wholesale dealers. The wholesale stocks are in the hands of dealers in London, Liverpool, and Antwerp. There is no stock here on the market. Tanners are at present importing hides from France and Italy in lots of from 10,000 to 20,000. There is, therefore, a constant demand for foreign hides.

The hides used here in the manufacture of leather, outside of the home supply, are obtained mostly from continental Europe, France, Italy, and Germany leading in the order named. There are some received from Australia and Argentina. Small parcels occasionally come from Calcutta and Rangoon. These are mostly buffalo hides and goatskins. About three-fourths of the whole supply is foreign. Very few hides are received from the United States, except those from the live cattle brought from there and slaughtered in Glasgow, about 40,000 per year.

There has been no exportation of hides directly from Glasgow to the United States since August 28, 1895, owing to the stringent regulations as to disinfection. Up to August 28, 1895, and before the receipt of the State Department circular of August 21, 1895, there were exported from Glasgow to the United States through this office hides valued at $68,022.88; since then, none.

The hides so exported came mostly from Ireland to Glasgow. Since the advance in hides, but few have reached here from Ireland, and dealers here think they may have gone to London or Liverpool.

Some hides come here on their way from India to the United States, but are invoiced at the Indian ports of shipment. They are reshipped here to the United States and pass on original invoices. I find that the Anchor Line in 1895 thus reshipped 930 tons (of 2,000 pounds) of dry hides; and of goatskins, 1,140 tons dry and 840 tons salted were reshipped in Cook's Line. The other lines, I have reason to believe, reshipped about the same quantity. But few of these hides are used in Glasgow.

There is no definite means of ascertaining the stock of leather on hand in Glasgow. There are no published reports or statistics of any kind obtainable. There are no public stores. The only way would be to interview all the dealers, from the manufacturers down to the shoemakers, and add up the sum total of the individual stocks on hand. I have found none of the dealers who would undertake to give an estimate of the amount of stock on hand, except as to value. The best authorities among them estimate that there is now in this city, in the hands of all dealers, from $1,750,000 to $2,500,000 of leather at present prices. This is not considered by any means a full stock, in view of the demand.

There is no rough leather of any amount exported from Glasgow. The home demand requires importation. There is, however, a considerable exportation of the manufactures of leather—belting, etc.—to the United States and other countries. Some rough leather goes to the United States, one firm having made small shipments about once a month during the last year. Another firm made two shipments, but were unable to dispose of them and the leather was returned.

About three-fourths of the leather imported comes from the United States. The balance comes from continental Europe, the East Indies, and Canada.

Of the leather consumed in Glasgow and vicinity, about eleven-sixteenths is home product and the balance imported.

United States leather is considered of the best quality, and there is nothing in the way of an increase of its importation except the price at which it is sold.

There are about twenty tanneries in Glasgow alone, and a great many more in the consular district. The home competition is, therefore, constant and lively.

It is claimed by the leather dealers here, and, in my opinion, justly so, that the restriction upon the exportation of hides to the United States by

way of disinfection has had the effect of raising the price of hides in our country, and consequently, the raw material being dearer, has raised the price of leather correspondingly.

The exportation of green or wet salted hides has entirely ceased from this port, and, I am informed by the dealers here, who ought to know, that it has also ceased throughout Great Britain.

All the dealers here agree that the immersion of hides in solution of carbolic acid or corrosive sublimate, as required per instructions of State Department circular of August 21, 1895, is destructive of the original fiber and renders the hides unfit for many classes of manufacture. They say that if this method of disinfection is rigorously insisted upon it will put an effectual stop to the exportation of hides to the United States. It has certainly done so as far as Glasgow is concerned. It is also claimed that there is no cattle disease of any kind in Great Britain, and that there is no more necessity for this disinfection than there is for the British regulation that all live cattle from the United States shall be slaughtered at the place of landing. The hides of these live cattle from the United States, some 40,000 per year, slaughtered in Glasgow, are, by the present regulation of disinfection, prevented from being returned to the United States.

It is further stated by these dealers, with some show of plausibility at least, that the hides not exported to the United States, because of the aforesaid restrictions, will be used here and increase the amount of the home manufacture of leather, thus stimulating the industry here and cheapening the home leather, while the United States product is increased in price, thereby decreasing, as a natural result, the importation of American leather.

ALLEN B. MORSE,

GLASGOW, *February 26, 1896.* *Consul.*

HULL.

With reference to the Department circular concerning the stock of hides on hand in this consular district, etc., I have to report that I have made the necessary inquiries, and find there are no local records which give any facts or figures calculated to supply the requisite information. With regard to local hides and skins, the secretary of the Hull Market Company informs me that no books are kept which would give the information. The import and export of both leather and hides can only be obtained through the custom-house bills of entry. The totals are not kept by any local sellers or manufacturers, who content themselves with a knowledge of their own stocks, without reference to statistics other than the rough estimates which they are able to form and the guidance which they receive from the market reports.

GORDON B. DANIELS,

HULL, *March 10, 1896.* *Acting Consul.*

LEEDS.

After thoroughly investigating the question of the hide and leather trade of Leeds, I can submit the following facts, from which it will be seen there is not much opening here for an increase in the leather exports from the United States, as most of the leather used here is now imported from there.

Leeds is said to be the first place in England that imported American leather, and it now imports virtually all the sole leather used in the extensive boot and shoe factories located here. From one-third to one-half of the upper leather is also imported from the United States. So it will be seen that there is not much of an opening for increased importations.

The stock of leather now on hand is very heavy, as, during the "boom" last year, large quantities were brought in and the decline in prices during the last six months and the phenomenally mild winter here have made the sale very dull and slow.

Leeds is the largest producer of leather in England, though no sole leather is tanned here. The trade in hides is conducted in the following manner: On every Friday the hides that have been accumulated in the district are taken to certain places, sorted, and sold by auction, the tanners attending and buying the same.

Hides are never salted and dried here, as in America, but are sold green, so there is never any stock of them kept on hand.

At this time, there are about 3,500 English hides sold here per week, and about 400 or 500 American hides are used per week.

The largest source of supply in numbers is British India. These Indian hides are of two kinds; that is, a part of them, say 15,000 to 20,000 per week, come half tanned in India and are finished here. About 12,000 to 15,000 per week come from India raw, or in the natural state, and known as "arsenic cured," though no arsenic is used on them, I am told. These Indian hides are from the very small Indian beeves and are only about one-third the weight of English or American hides.

Very little leather is exported from Leeds, but what is exported goes to France, Germany, and the colonies, in the order named. A small quantity of leather goes from here to the United States, but these shipments are specialties, and a little extra sole leather from one party.

NORFLEET HARRIS,

LEEDS, *March 26, 1896.* *Consul.*

LIVERPOOL.

The stock of hides in Liverpool appears to be very small, probably under 10,000 of all classes, but it seems to be sufficient to meet the demand. There being no need to carry heavy stocks, the tanners buy their supplies forward. Years ago, it was quite a common thing to have a stock of from 300,000 to

500,000 hides, kips, etc., but the tanners then bought their supplies on the spot. Now, the tanneries are much larger and worked on the more modern system of buying direct.

There are 3,000 salted River Plate heavy hides in stock and from 2,000 to 3,000 salted heavy French, Italian, Swiss, etc., and certain lots of East Indian buffalo hides. There are no hides of British origin in stock, unless it be a few Irish. The hides taken off English cattle, etc., amount to about 2,000 to 3,000 weekly, and they are sold by auction each week.

All American and Canadian cattle arriving at this port are landed and slaughtered at Birkenhead immediately on landing; the hides are generally sold each week and sent to tanneries fresh. The hides of American, Canadian, and Irish cattle are suitable, when salted, for American tanneries, and until recently were sent to the United States for that purpose. It is claimed by the trade that the stringent regulations in regard to disinfection under the quarantine laws and regulations of the United States, whereby each hide has to be immersed in a carbolic solution, practically prohibits them, owing to the cost of labor, etc., connected therewith.

The stock of leather on hand in Liverpool is always, it appears, an unknown quantity, as it is held by a great variety of private firms and sold or offered by them to consumers in the country. It is, however, by those in the trade considered to be rather large, quite ample for all requirements. The bulk of the stock is of United States and Canadian origin. That of British origin is generally held in the tanneries, and samples merely held in Liverpool, unless, as is sometimes the case, tanners want an advance on the leather; then, it is put into warehouse in Liverpool. Of late years, this style of business is being less resorted to. It is noticeable that the consumption of American leather is very large and is constantly increasing.

Leather is exported chiefly to European countries, but last year, a large quantity found its way to the United States, owing to the quick advance in prices on that market. The following table shows the total from this country:

Exports of leather.

Description.	1894.		1895.	
	Quantity.	Value.	Quantity.	Value.
British manufacture.				
Unwrought.....pounds...	15,249,136	£1,230,074	17,817,968	£1,423,016
Wrought (except boots and shoes).....	.....	279,389	.....	355,422
Boots and shoes.....dozen pairs...	668,563	1,614,076	675,191	1,581,799
Saddlery and harness.....	.....	423,239	.....	473,958
Total.....	.....	3,546,778	.....	3,834,195
Foreign and colonial manufacture.				
Unwrought.....pounds...	26,196,842	1,782,989	29,606,200	1,970,332
Boots and shoes.....dozen pairs...	10,123	26,707	16,243	43,469

Tanners claim that they are unable to compete with protective tariffs. On the general question of the consumption of leather, the opinion appears to be that the future will see a keener competition between that of English and American origin. In the early years of American leather imports and for a long time afterwards, the tanneries here were comparatively small and worked on very uncertain lines. Now, however, as I have before stated, the tanning is done in large tanneries under all the latest improvements and everything of advantage is used. Consequently, a large number of the small yards are closed. Again, in the early days, the tanners here stated that our American tanners had bark cheaper than they can now purchase it, while against this, the English tanners claim to work with the great advantage of getting their tanning materials at a very low price, owing to the immense quantities of extract and natural tannings which they receive from other countries.

JAMES E. NEAL,

LIVERPOOL, *April 13, 1896.* *Consul.*

LONDON.

It is impossible to ascertain, even approximately, the amount of leather and hides held in this country at present or at any given time. There appear to be no statistics on the subject, and the dealers, tanners, and trade journals simply discuss it in a general way on the basis of foreign and domestic demand and supply and the rise and fall of prices. Prices advanced rapidly during the early part of 1895, largely on increased demand from the United States, and fell early in the autumn, when that demand substantially ceased. Since then, the market has been dull and the immediate outlook is not encouraging.

Except in special lines, and in these for small quantities, Great Britain appears to have an ample stock of hides and leather for present needs.

Great Britain imports from the United States chiefly hemlock sole, rough split, and furniture and harness leather. The recent and present imports seem to fully meet all demands, and it is doubtful if the trade can be pushed harder at ruling prices.

I may be permitted to add that in my judgment no trade is controlled by more energetic, clear-sighted merchants than the hide and leather trade in the United States and Great Britain; and they are in constant touch with one another.

Subjoined are the imports and exports of Great Britain for the years 1894 and 1895.

Imports.

Articles.	Quantity.		Value.	
	1894.	1895.	1894.	1895.
Boots and shoes.....dozen pairs...	115,429	132,058	£348,220	£398,755
Hides, raw, and pieces thereof:				
Dry—				
From British East Indies.....cwts...	219,816	263,516	464,300	561,318
From other countries.....do.....	199,389	228,126	524,612	592,623
Total.....do.....	419,205	491,642	988,912	1,153,941
Wet—				
From Belgium.....do.....	115,686	103,298	239,835	236,096
From France.....do.....	70,535	77,572	160,070	180,236
From Argentine Republic and Uruguay...do.....	61,660	45,160	127,436	120,696
From Brazil.....do.....	4,866	11,880	9,117	32,094
From Australasia.....do.....	76,699	113,402	105,018	198,579
From other countries.....do.....	279,138	419,824	600,692	884,055
Total.....do.....	608,584	771,136	1,242,168	1,651,756
Leather:				
From France.....pounds...	5,091,833	6,597,352	680,705	857,672
From British East Indies.....do.....	34,699,139	41,488,329	2,282,582	2,575,277
From Australasia.....do.....	15,244,745	18,930,551	611,402	763,877
From United States.....do.....	63,148,945	63,992,396	2,564,020	2,734,96
From other countries.....do.....	9,605,652	10,944,343	955,337	1,119,749
Total.....do.....	127,790,314	141,952,971	7,094,046	8,051,511

Exports.

Articles.	Quantity.		Value.	
	1894.	1895.	1894.	1895.
Leather, tanned, tawed, or dressed:				
Unwrought.....cwts...	136,153	159,089	£1,230,074	£1,423,016
Wrought (except boots and shoes).....do.....	.....	.....	279,389	355,422
Boots and shoes:				
To Brazil.....dozen pairs...	57,866	60,983	185,789	194,632
To British possessions in South Africa.....do.....	207,846	204,197	521,621	516,920
To British East Indies.....do.....	29,752	27,685	78,144	72,239
To Australasia.....do.....	224,472	234,058	473,929	457,590
To British West Indies and Guiana.....do.....	66,759	55,295	140,337	112,651
To other countries.....do.....	81,868	92,973	214,256	227,567
Total.....do.....	668,563	675,191	1,614,076	1,581,799
Hides, raw, and pieces thereof:				
Dry—				
To Germany.....cwts...	76,203	79,557	182,153	188,981
To Holland.....do.....	29,002	21,300	75,823	54,645
To other countries.....do.....	135,169	196,995	349,229	502,501
Total.....do.....	240,374	297,852	607,205	746,127
Wet.....do.....	162,936	270,129	281,111	475,073

PATRICK A. COLLINS,
Consul-General.

LONDON, *February 28, 1896.*

NEWCASTLE.

After inquiry at the most competent sources, I learn that, during the past ten years, there has been a steady decline in the market price of hides, until about midsummer of the past year, when, from a general apprehension of a scarcity in the world's supply, a sudden advance took place, and thus, from an eagerness to secure supplies, the price was driven up to a point fully 50 per cent above the lowest previous record. From the highest point attained for leather, the present prices show a decline of about 5 to 7½ per cent.

The trade is a very important one in Great Britain, and with the amount of literature, including the trade papers, published on the subject, on both sides of the Atlantic, it is thoroughly well known to all engaged in it.

In regard to increasing the market in England for American leather—the importation of which is already very important—my informants are of the opinion that this can only be done by furnishing the same qualities at prices materially lower than those ruling in England.

The export to the Continent is chiefly in manufactures, and largely in belting.

No account is taken of local stocks, nor do they affect local prices, the facilities of communication and transportation are so great and distances unimportant. Stocks of hides and leather in the Kingdom only are taken into account as affecting prices, and these are noted and given out from the principal centers of the trade, such as London, Liverpool, and Manchester, especially the former, where the great periodical sales occur and prices are established.

WM. S. CAMPBELL,

NEWCASTLE, *January 28, 1896.* *Consul.*

TUNSTALL.

I have made a careful tour of this district and find that there is only one small tannery therein. This yard is supplied with hides from the local butchers and tans chiefly for the local trade. All other leather used in small harness and shoe shops is purchased in Manchester. The users of the same know nothing of the source or origin of the hides; they are, however, English tanned.

Boots and shoes are purchased chiefly in Northampton and Leicester, and the dealers can give no information as to whether the leather is English or foreign tanned.

WENDELL C. WARNER,

TUNSTALL, *May 4, 1896.* *Consul.*

FRUIT CROP OF SICILY.

I beg to report upon the prospects of the fruit crop of this district for the coming season as follows:

It is estimated that the lemon yield will be fully as large as that of the season just closed. It is probable, however, that the verdelli, or spring crop, will be much larger and the winter crop correspondingly smaller than last season. Many of the growers have reduced the irrigation in order to produce this result, experience having proved that the former are the more profitable. The fruit is reported as being in good condition, and on account of the phenomenal rains in July and August, is so far advanced that gathering will begin about the 25th of this month, and the first new fruit will be shipped early in October.

The orange yield promises to be in every respect a full crop; in other words, nearly double that of last season. Bergamots and bitter oranges, as well as citrons and mandarins, are in good condition, and the yield, it is estimated, will be 25 per cent greater of bergamot, while the others will about equal those of last season.

I inclose a table showing the exports of oranges and lemons from Sicily and from Messina alone by months, from October 7, 1895, when the first steamer left, to August 29, when the season practically ended.

Month.	From Messina, Catania, and Palermo.		From Messina.	
	Oranges.	Lemons.	Oranges.	Lemons.
	Boxes.	*Boxes.*	*Boxes.*	*Boxes.*
October	1,383	181,803	1,156	138,994
November	57,664	172,205	28,919	113,882
December	157,613	216,993	53,935	106,408
January	100,639	235,599	42,157	72,864
February	98,724	306,824	61,741	129,377
March	95,770	305,708	33,942	89,220
For Montreal	*29,394	*119,389	.....	.....
April	25,822	335,624	7,253	113,936
May	3,617	427,066	.....	110,062
June	.....	314,479	.....	37,325
July	.....	207,400	.....	48,504
August	.....	115,376	.....	33,160
Total	541,232	2,819,134	229,103	993,732

* The figures for Montreal are not included in the above total.

CHAS. M. CAUGHY,

MESSINA, *September 1, 1896.* *Consul.*

Adverting to former reports on the orange and lemon crops of this district for 1895–96, and especially to reports dated October 2, 1895, and April 24, 1896, in the first of which it was stated the crops would be unusu-

ally large, but the fruit inferior in quality, and in the second that the fruit had recently been greatly damaged by hail and rains, I now have the honor to state that the exports from Palermo to the United States for the season about to end will show an excess over last year of from 300,000 to 500,000 boxes. The season, owing to the inferior quality of the fruit and the low prices obtaining in the United States, has been one of the most disastrous in the history of the trade.

WILLIAM H. SEYMOUR,

PALERMO, *August 17, 1896.* *Consul.*

EXPORT TAX ON SICILIAN SULPHUR.

This morning I cabled the Department as follows:

Government, from to-day, exacts 1 lira* tax per ton on sulphur, besides present export duty of 11 lire.

The decree ordering the above additional tax, although dated August 12, was not published until yesterday and went into effect this morning, its enforcement producing the greatest surprise and excitement. It is the opinion of leading exporters that its object is to avert, to as great an extent as is possible, any injury that might arise to the fiscal interests of the Government from the operation of the royal decree of the 27th of July last, which, after October 1, abolishes the present export duty of 11 lire per ton and substitutes a duty of 1 lira per ton upon all sulphur leaving the island of Sicily, that going to the mainland of Italy thereby being placed upon the same basis as exports to other countries. It is the spirit of the decree that this tax shall be paid by the Anglo-Sicilian Company, the new sulphur trust,† but it is so ambiguously worded that it is construed by many that the payment can be evaded by the company selling at the mouth of the mine, thus not figuring as exporters. The Government thereby would lose the duty. If this opinion be well founded, the duty of 1 lira imposed by the royal decree of July 27 may be abolished on October 1, but the fact remains that from to-day until that date, the cost of sulphur to consumers has been augmented 1 lira. In November, the decrees will be either adopted or rejected by Parliament, and in the latter event, the amount collected will have to be refunded by the Government, all exporters paying it under protest.

CHAS. M. CAUGHY,

MESSINA, *August 24, 1896.* *Consul.*

I cabled the Department this morning as follows:

Additional lira export tax per ton on sulphur suspended, except for syndicate, until October 1.

The fact that those in the Anglo-Sicilian Company are not included in the suspension is very significant as showing what influence those outside the

*1 lira=19.3 cents. †See CONSULAR REPORTS No. 192 (September, 1896), p. 227.

syndicate are able to wield. If they are as powerful when Parliament meets in November, they will probably be able to prevent the adoption of the decree of July 25, which gave the syndicate such great privileges, in which case the corporation will find itself in a most unenviable position. The refusal to exempt them from paying the additional tax of 1 lira until October 1 does not affect them financially, as it is very clearly understood, as stated in my report of August 24, that they have no intention of being exporters, but it is a very forcible intimation that there are many breakers ahead which were not anticipated by the English capitalists, who are the largest holders of stock in the company.

CHAS. M. CAUGHY,

MESSINA, *September 3, 1896.* *Consul.*

LABOR IN SICILIAN SULPHUR MINES.

I inclose the originals and translations of two circulars which have just been issued by the civil commissioner for Sicily. The circulars affect laborers in all Sicilian sulphur mines, and from a humanitarian standpoint, are very interesting.

WILLIAM H. SEYMOUR,

PALERMO, *August 18, 1896.* *Consul.*

[Translation.]

To the prefects of the provinces of Sicily.

GENTLEMEN: It is known that many workers of sulphur mines, instead of paying the laborers the agreed wage in money, are accustomed to furnish them with provisions, for which exorbitant prices are charged, from stores or deposits established for the purpose. It is evident that this is a fraud, to which, for fear of losing their work, the laborers submit.

All this is unworthy of a civilized country and contributes not a little to nourish the discontent of the country and ill will toward the workers of the mines, and it constitutes, with other abuses, and with the economical crisis with which the country is affected, a standing menace to public order.

Numerous complaints have called the attention of the Government to the grave irregularity, and I feel it my duty to leave no stone unturned to stop it. Therefore, I request you to inform all workers of mines in your province of the view of the Government, persuading them that such a system is unjust and inhuman; that the laborer has an absolute right to receive his wage in money and that, with the wishes of the authorities, they should comply most willingly, since the Government and Parliament have done a loving and efficacious work to the advantage of the sulphur industry which, at one time, was, and again will be, without fail, one of the greatest resources of this island.

I feel sure (from experience in some single cases) that the good offices of the Government authorities will bring about the desired results. But if they do not, I shall be constrained—and it is well that this be known—to denounce to the penal magistrate those who obstinately continue to pay their laborers in provisions, and, if necessary, will have enacted special laws for the repression of the intolerable abuse.

CODRONCHI,

PALERMO, *August, 1896.* *Minister, Civil Commissioner for Sicily.*

[Translation.]

To the prefects of the provinces of Sicily.

GENTLEMEN: It has come to my knowledge that many sulphur-mine workers infringe on the dispositions contained in the law of February 11, 1886, as to the work of children, not only as to the limit of age, but also as to the working hours and the physical constitution of the working boys.

Now, it is the Government's intention that the law shall have full and scrupulous execution. You are, therefore, requested to obtain the most detailed information concerning the mines existing in your province, admonishing mine workers to observe the above-mentioned legislative dispositions. It is also necessary to assure yourself that mine workers comply with the dispositions contained in the regulations approved with royal decree September 17, 188–, which have a very great importance, inasmuch as they enable mine engineers and industrial inspectors to establish easily the contraventions and to provoke the application of the sanctions established in article 4 of the law.

I should be pleased to be informed as to the requirements that you will adopt in the premises.

CODRONCHI,
Minister, Civil Commissioner for Sicily.

PALERMO, *August, 1896.*

PASSAGE MONEY FOR VENEZUELAN IMMIGRANTS.

I inclose a copy and translation of a recent decree issued by the President of this Republic in regard to the passage fares which shall be paid by the Government of Venezuela, if the introduction of immigrants should be undertaken by any company or private individual.

E. H. PLUMACHER,
Consul.

MARACAIBO, *August 31, 1896.*

[Translation.]

The President of the Republic has disposed that the agriculturists who should wish to introduce emigrants for the cultivation of their respective farms can repair to this office, when the corresponding authorization shall be granted to them, according to article 17 of the law on immigration now in force and No. 87 of the reglamentary decree, which reads as follows:

ART. 17. The company or private person who shall desire to introduce emigrants into the Republic shall apply to the national Executive for the corresponding authorization, which shall be given by the respective Minister, but they shall previously bind themselves to comply with the rules prescribed in the present decree, and also to the reglamentary decrees and resolutions which shall be in force at the time of issuing said authorization.

ART. 87. The amount to be paid for passages of the emigrants shall not exceed the following prices:

From Europe and Canary Islands.—Persons from 12 to 60 years, 120 bolivars;* persons from 3 to 12 years, 60 bolivars.

From the United States.—Persons from 12 to 60 years, 80 bolivars; persons from 3 to 12 years, 40 bolivars.

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* 1 bolivar=19.3 cents.

NEW TARIFF OF NICARAGUA FOR WINES AND LIQUORS.

I send herewith the original of the new tariff law for wines, liquors, and beer imported into Nicaragua and a translation of the same. The law takes effect with its publication on the 19th of August, 1896, and I am satisfied that it will be of great interest to exporters of liquors and wines in the United States, and particularly in California.

PAUL WIESIKE,

MANAGUA, *August 26, 1896.* *Consul.*

[Translation.]

NEW TARIFF FOR WINES AND LIQUORS IMPORTED INTO NICARAGUA, TAKING EFFECT AUGUST 19, 1896.*

The President of the Republic, considering that practical working has shown the inconveniences of the law of the 21st of December, 1895, relating to simple (soft) liquors of foreign make, of wines and mixed liquors, whose standard of strength was fixed at 14° for the exaction of import duties according to the tariff, as it happened that most of the wines imported are of greater alcoholic strength, and as these rules had also occasioned a great deal of work to the custom-houses, as the goods arrive in a variety of kinds of packages, * * * he orders:

ARTICLE 1. At the importation of wines which have no more than 20° strength, such wines will pay a duty of 6 cents (about 2.61 cents in United States currency) for each pound (Spanish) weight (gross). If they are of higher grade, they will pay 1 cent more for each degree of strength per pound.

ART. 2. Liquors mixed or made up whose strength is not higher than 20° will pay 12 cents (5.22 cents in United States currency) for each pound weight gross, and in case they are of higher grade, each grade will be surcharged with 1 cent more for each pound weight.

ART. 3. Wines and mixed liquors which contain more than 30° will be considered as simple foreign liquors, provided that their strength does not reach over 50° and will pay 30 cents (13.05 cents in United States currency) for each pound.

ART. 4. The simple foreign liquors which should not be of more alcoholic strength than 50° will pay 30 cents (13.05 cents in United States currency) for each pound, and in the contrary case, they will pay for each degree higher 1 cent more per pound as surcharge.

ART. 5. Beer will pay 4 cents (1.74 cents in United States currency) per pound gross; champagne or other sparkling wines will pay 12 cents (5.22 cents in United States currency) per pound gross weight.

ART. 6. The alcoholic strength will be measured with the alcoholometer or the ebullioscope, with scaling up to 100° of Gay-Lussac. The duties will be charged in every case on the gross weight, without any regard to the manner in which they are put up or any reduction of packing.

ART. 7. Canceled herewith are the laws of the 21st of October and the 21st of December, 1895, the articles 69, 71, 73, and 77 of the regulations of dues on liquors, the tariff of customs, and all the laws which treat the articles herein mentioned and specified in the present law, which will come into operation at once from its publication.

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*There existed in Nicaragua until lately various rules about import duties on strong spirits and wines which made the execution of the several laws somewhat cumbersome, and as a result, even shut out most of the wines of California make, as they are high in their alcoholic grades of strength. This has been finally understood by the Nicaraguan Government and the laws have been revised, the result of which is the new tariff.

CENSUS OF THE ARGENTINE REPUBLIC.

The following data, taken from the report just made by the census bureau, gives some of the results of the census taken last year in the Argentine Republic in accordance with the national decree.

According to the census, the number of persons in the Argentine Republic on May 10, 1895, was 4,042,990; the estimated number of Argentines outside the boundaries of the Republic on that day is placed at 50,000, thus making the total population 4,092,990. This population is distributed as follows:

Districts.	Population.	Districts.	Population.
City of Buenos Ayres (federal capital)	663,854	Territories:	
Provinces:		Misiones	33,005
Buenos Ayres	921,225	Formosa	4,829
Santa Fe	397,285	Chaco	10,280
Entre Rios	290,994	Pampa Central	25,765
Corrientes	239,570	Neuquen	14,517
Cordoba	351,745	Rio Negro	9,300
San Luis	81,155	Chubut	3,748
Santiago del Estero	160,445	Santa Cruz	1,058
Mendoza	116,698	Tierra del Fuego	477
San Juan	84,251	Indians (estimated)	30,000
Rioja	69,228	Probable omissions (estimated at 1½ per cent)	60,000
Catamarca	90,187	Argentines abroad (estimated)	50,000
Tucuman	215,693		
Salta	118,138		
Jujuy	49,543		

The population of the different cities of the Republic is given as follows:

Cities.	Population.	Cities.	Population.
Buenos Ayres	663,854	Salta	16,672
Rosario	93,584	Corrientes	16,060
La Plata	43,406	San Juan	10,409
Cordoba	42,783	San Luis	9,826
Tucuman	34,297	Santiago del Estero	9,817
Mendoza	28,803	Catamarca	7,307
Parana	24,099	Rioja	6,425
Santa Fé	22,244	Jujuy	4,158

The increase in the population between September 15, 1869 (the last census), and May 10, 1895 (the date on which the present census was taken), has been 2,218,776, equivalent to an increase of 120 per cent, or an annual increase of 4.6 per cent. The urban population of the Republic has increased 1,045,944.

The greatest increase in population has been in the province of Santa Fé, where it has amounted to 346 per cent, and the lowest in the province of Catamarca, where it has amounted to but 13 per cent.

The greatest increase in population among the cities of the Republic has been in Rosario, which has increased 304 per cent since the census of 1869.

The area of the Republic is given as 2,977,772 square kilometers (1,850,316 square miles), making the population 1⅔ per square kilometer (1.191 per square mile).

The population of the different provinces, per square kilometers, is as follows:

Provinces and territories.	Population per square kilometer.*	Provinces and territories.	Population per square kilometer.*
Provinces:		Provinces—Continued.	
Buenos Ayres	3569.1	Catamarca	1.06
Santa Fé	3.03	Tucuman	9.81
Entre Rios	3	Salta	0.72
Corrientes	3.92	Jujuy	0.99
Cordoba	2.81	Territories:	
San Luis	2.03	Misiones	1.11
Santiago del Estero	1.71	Formosa, Chaco, Pampa Central, Neuquen, Rio Negro, Chubut, Santa Cruz, and Tierra del Fuego.	0.05
Mendoza	0.79		
San Juan	0.88		
La Rioja	0.84		

* 1 square kilometer=0.621376 square mile.

It is estimated that there are 345,393 foreigners in the city of Buenos Ayres, and that the total number of foreigners in the Republic is about 1,000,000. The figures covering this part of the census have, however, not yet been tabulated.

Among the Argentine portion of the population, the females exceed the males in number, while it is estimated that two-thirds of the foreign population are males.

Miscellaneous statistics.

Description.	Number.	Description.	Number.
Schools	2,744	Breweries	44
Newspapers and other publications	405	Distilleries (including all establishments producing alcohol)	108
Libraries	150	Establishments producing wine	852
Hospitals	129	Cattle	12,316,037
Catholic churches	849	Sheep	63,611,108
Non-Catholic churches	50	Hogs	3,079,038
Theaters	121	Goats	489,916
Flour mills	532	Mules	974,763
Sugar mills	48	Asses	307,287
Sugar plantations	2,749	Mares	181,302
Vineyards	6,513		

WILLIAM I. BUCHANAN,
Minister.

BUENOS AYRES, *July 30, 1896.*

DEVELOPMENT OF SIERRA LEONE.

I have the honor to forward, for the information of the Department, two copies of the Sierra Leone Weekly News, containing an address by His Excellency Col. Frederic Cardew, C. M. G., to the legislative council of this colony on the subject of his recent tour in the hinterland and protectorate, which contains many matters of commercial interest.

ROBT. P. POOLEY,

FREETOWN, *May 1, 1896.* *Consul.*

ADDRESS OF HIS EXCELLENCY COL. FREDERIC CARDEW, C. M. G., TO THE LEGISLATIVE COUNCIL, SIERRA LEONE, APRIL 21, 1896.

HONORABLE GENTLEMEN: Having recently returned from a prolonged tour in the protectorate, it becomes my pleasing task to make you acquainted, as far as I am able, with my experiences, in order, not only that you, as members of the legislature, may have an increased knowledge of our possessions in the interior, which knowledge is so important for their proper administration, but that also the general community of this colony, through the publicity that is always given to the proceedings of this council, may become better acquainted with the geography, products, and resources of the countries which lie at their doors.

My recent tour is the third I have made in the interior. The routes followed on each of the tours may be described as three loops which commence and terminate at Freetown and extend to the frontiers, intersecting here and there. These routes were arranged, as far as possible, to cover fresh ground on each tour, so that no considerable section of the protectorate might remain unvisited.

The distance traversed by land on each of the two first occasions was about 600 miles and on this last tour about 675 miles. On each tour I have been accompanied by an officer who was able to take astronomical observations—by Mr. Alldridge, district commissioner of Sherbro, in 1894, by Captain Compton, R. N., in 1895, and this year I obtained the services of Major Grant, R. E., who is one of the best observers in the army. The results, therefore, of the surveys made by these officers, together with the topographical work which is now being carried on by the Anglo-French boundary commission, will be that we shall have a fairly accurate map of the protectorate, and a map which, compiled, as it will be, from the work of so many scientific officers, will, I believe, compare favorably with the existing maps of any of the colonies on the west coast of this continent. This map, I hope, may hereafter be published at such reasonable rates as to be within the means of all to purchase it, and I also hope that in the future a good, large scale map for our schools may be compiled from it.

Our large rivers have now been traced to their sources, the direction of their courses have been ascertained, large tributaries of these rivers have been discovered, the lines of the main watersheds have been explored, the positions of the most important towns and places have been determined by accurate scientific methods, and the trade routes of the country have been traversed and plotted. So, if only a knowledge of the geography of the protectorate has been obtained for the large sums of money that have been expended in the past on missions to the far interior and on governor's tours and those of traveling commissioners, such sums have been well laid out, but those missions and tours, and, I may add, the work of the frontier police, have given us also much valuable information regarding the products, resources, and inhabitants of the interior.

The positions and extent of the forests have been approximately ascertained, the areas within which indigenous products are to be found are better known, more reliable information has been obtained as to the districts in which products, such as rice, cotton, kola nuts, groundnuts, etc., are cultivated, and, lastly, more is known of the characteristics and habits of the various tribes which occupy the remoter parts of the protectorate.

In giving the credit for the greater knowledge we now possess of the interior to the tours and missions of governors and other officials, I have advisedly included the frontier police, for to this force we owe much of the knowledge gained. They are everywhere in the interior, and there is hardly a bush track or bypath that they have not traversed, and it was only the other day that a party of them, during an expedition to put a stop to the slave raiding which has been carried on for the last eighteen or twenty years across the Anglo-Liberian frontier, discovered, concealed in the recesses of the vast forest which extends for nearly 100 miles along that frontier, the Morro River, a large tributary of the Mano or Bewa River. This expedition was conducted by Inspector Boileau, whose recent death we now have to mourn. He was a young officer of high promise and had performed gallant services for this colony.

The discovery of the Mano River has quite altered the prevalent idea as to the direction of the course of the Mano. It has generally been assumed that that river flowed from northeast to southwest, and it is so indicated in the existing maps, but now it is known that above its confluence with the Morro, it takes a westerly course, and that it is the latter river which runs southwest.

Along both banks of these rivers and in the greater portion of the country embraced by them, there are now extensive forests. There is evidence to show that in former years there existed along these rivers towns and villages, with cultivation, but owing to the constant raiding across the frontier during the past, the land has become depopulated and has reverted to its primeval condition of forests, which have remained closed, except to those more adventurous spirits who traverse them when on the warpath. Owing to the dread inspired by these raiders, until the late expedition by the frontier police, the peaceable natives did not dare venture into them, so they became the haunts of elephants and other wild beasts.

The route taken by my party is indicated in red in the map laid on the table. It follows the course of the Rokel or Seli River (to give it the name better known upcountry) as far as Benkia; thence, by the well-beaten track, through Matotoka to Makali; thence we struck across the Kuniki country to Kru, or Kruto, as it is now called.

The distance between Makali and Kruto is a little over 40 miles as the crow flies and 65 by the track we followed. Until within the last two years this district had been entirely uninhabited for the previous eight or ten years, owing to the wars that have been carried on during that period between the Kuniki and Koranko tribes, and to Sofa raids. This district now consists, for the greater part, of forests. I am glad to say, however, that it is being reinhabited, though slowly.

Between Makali and Kruto we passed only four towns, and these have been quite recently rebuilt, but I have every hope that those of the former inhabitants who have not been carried away into captivity will soon reoccupy their old town sites.

From Kruto we went due east to Tembi-Kundo, the source of the Niger, across some of the most hilly and broken country I have ever traversed.

In the neighborhood of Tembi-Kundo it is quite mountainous, the hills rising to an elevation of between 4,000 and 5,000 feet. The group of mountains about Tembi-Kundo form a remarkable watershed; the waters part from it to nearly all the points of the compass—the Niger and its affluents to the north, the Meli and its affluents to the south, and the large rivers which drain the protectorate to the south and west.

From Tembi-Kundo, we followed as far as practicable along the meridian of longitude which forms the Anglo-Liberian frontier to Kare-Lahun.

A portion of the country lying between Waima and Kare-Lahun appears never to have been visited by a white man before. This district comprises a part of the Kono and Kissi countries, the latter lying to the east of the Meli River. It is well populated and the people

seem industrious and anxious to trade, but the soil is poor and the indigenous products are scanty.

From Kare-Lahun, after making a detour through the Luawa and Bombali districts, we proceeded to Yandahu, following the valley of the Moa River, which is known lower down as the Sulima. From Yandahu, we quitted the main route, as I was anxious to explore the Morro River, and went to Taiama. Here, also, the white man had never been seen before. From this place, we penetrated the forest for about 12 miles and struck the Morro at a deserted village called Parima. The river at this point is from 60 to 80 yards in width and has a large volume of water. Returning to Taiama, we rejoined the main route at Juru, and after proceeding along it to Kokoru, we branched off to Fangiwalahun, where we again entered the forest and struck the Morro River near its confluence with the Mano or Bewa River, the latter name being the one by which it is known in that district. The Morro at this point is a grand stream, being quite 120 yards wide, and the Mano is still larger, with a width of 150 yards, but, like all rivers in this colony, they are useless for navigation, owing to the barriers of rocks that so often obstruct the channel. At their confluence there is a wide strata of rocks, to force which barrier the two streams are broken up into numerous rapids and narrow channels.

From Fangiwalahun, we returned to the main route at Gorahun and thence proceeded to Bandasuma; from Bandasuma we went via Bandajuma and Mafwe to Mattru, where the land portion of our journey ceased. This part of the country is well known. To the east of Bandajuma, oil palms are very abundant and a large proportion of the kernels and oil shipped from this colony comes from the district comprised between the Wanji, which flows past Bandajuma into the Kittam and the Mano rivers. Between Bandajuma and Mattru the whole country is under cultivation, and there are large fields of rice.

I do not think, as I have often before stated, there is a superabundance of indigenous products to be found within the protectorate, and owing to a sparse population there can not be the same volume of trade as exists in some colonies of the west coast which have the advantage of a teeming population in their hinterlands. Therefore, while I would caution the trading community against being oversanguine as to large profits consequent on any developments that are taking place, I must, at the same time, maintain that with a proper system of administration in the protectorate and wisely directed enterprise on the part of the traders, there is no reason why there should not be a steadily increasing trade and a rising revenue.

I often hear it asserted that the trade of the colony is not what it used to be in former years, but I have before me a return for the last fifteen years, which does not bear out that statement, if I may judge by the annual value of the products that have been exported during that period.

For the five years from 1881 to 1885, the average annual value was £386,447; during the next group of five years, viz, from 1886 to 1890, it was £333,389, a fall in value of over £53,000 per annum, but in the last five years it has been £435,175, a rise of nearly £102,000 per annum, as compared with 1886 to 1890 and of nearly £49,000 per annum as compared with the good years of 1881 to 1885.

It may be owing to increased competition that the profits are not so great for traders, but the gross amount of native produce brought down to the ports is on the increase, notwithstanding the smaller amount that has been received during the past two years in the Sherbro district.

Though, as I have remarked, the indigenous products of the protectorate may not be superabundant, still, I believe, partly from want of cheap means of transport, a lack of enterprise on the part of the traders, the ignorance of the natives in the methods of gathering and preparing their products, such as rubber and palm oil, and their paucity of wants, not nearly half the products of the country are ever brought to the markets.

There are large tracts of forests with abundance of rubber and valuable timber awaiting exportation. They have been in no sense explored, and they only require intelligent and

systematic methods for gathering the rubber to yield their wealth to the first comer who has the necessary enterprise.

For instance, the forest to which I have already referred as lying between Makali and Kruto may be roughly estimated to cover the greater portion of the district between the Seli River on the west and the Bagwe on the east, and an east and west line drawn through Kruto in the north, and a similar line drawn through Makali in the south. This area comprises portions of the Kuniki and Koranko districts, and the extent of forest land within it may, on the most moderate calculation, be computed at about 600 square miles.

Along a great portion of the route taken by my party, the forest is of some eight to ten years' growth, but in many parts of the district there is, I have no doubt, the virgin forest; but even in the forests of recent growth there is abundance of rubber, and three kinds of such plants were pointed out to me. Two were vines called, respectively, in the Timni language "lilibue" and "nofe," and the third a tree called in the same language "kewatia." The "lilibue" yields the choicest rubber in the protectorate. In gathering it, incisions are made in the bark of the vine, which is not, however, always cut down. In the case of the "nofe" vine, it is invariably cut up into small pieces of about 6 inches in length, and thus completely destroyed. The "kewatia," *i. e.*, the rubber tree, appears to grow rapidly, and in eight or ten years to attain a girth of from 2 to 3 feet, but the tree, however, like the "nofe," is also destroyed in the process of gathering its rubber; it is felled and the bark ringed at intervals of about 6 inches along the trunk. The rubber appears to be treated in a different way to that of the vines; the latter is, as you know, coagulated with lime juice, but the rubber which exudes from the rings cut in the tree is placed in hot water, on the surface of which it coagulates, and is then cut into strips, which are formed into balls for the market.

I have ventured, at the risk of being tedious, to go into detail in describing the manner in which the rubber is gathered.

I think we must all admit that the native processes are crude and wasteful in the extreme, and it is evident if more intelligent and economical methods were adopted, as I understand is the case in the Brazils and other parts of South America, there would be a far larger yield and every probability that the West African rubber would command as high a price as South American. But if some steps are not taken to teach the natives better methods for extracting rubber than they now use, it may safely be predicted that with the increasing demand for rubber, in a few years the plant will become extinct and an industry which should be one of the most thriving in the colony will be ruined.

In the forests I am speaking of, the rubber is gathered by Susu traders in the crude and wasteful manner I have described. The natives in the Koranko and Kuniki districts, especially in the former, appear to be very ignorant of its value and the methods of gathering it. I feel quite convinced that if traders were to either go themselves or send as agents into these parts men well experienced in the industry, they would be rewarded for their trouble and expense with rich harvests.

The methods which prevailed in South America should be studied and adopted if found practicable here. A short account of the preparation of the Para rubber, which is the premier rubber of the world and is obtained from a large tree which forms extensive forests in the lowlands of the Amazon, was published at the recent agricultural exhibition and the curator is now drawing up an account of other processes which may be suitable to the rubber industry of this colony.

The natives of the interior require to be trained to an intelligent way of working, not only in the preparation of rubber, but also in that of palm oils. It is absurd to think that for the purpose of extracting a few ounces, or, say, even pounds, of rubber, large trees should be felled, as is the case now, not to mention vines, and so completely destroyed. In the territory of the Amazon, each rubber tree is made to yield an annual crop, and the bark, instead of being ringed, has a number of incisions made in it as far up the trunk as the hand can reach, and the milk is caught in little hollowed-out lumps of clay which are placed below each

incision. This work is done by the Indians and there is no reason why the aborigines of the interior should not be taught to adopt similar methods. If the traders who purchase the rubber and other indigenous products would inform the Government in what direction they consider reforms should be introduced in the prevailing systems of gathering such produce, the Government would, I feel sure, lend an attentive ear to their suggestions.

The forests in the Kuniki and Koranko districts are, relatively speaking, very accessible from here, Makali, from which place they can be entered, being distant about seven days' easy marching, and there is water carriage for light canoes from Benkia, two marches from Makali, down the Rokel River.

But these forests are small compared to those on the Anglo-Liberian frontier, along the Morro and Mano rivers, which extend for 800 or 1,000 miles. Had it not been for the border raids which have been carried on for the last eighteen to twenty years, I have no doubt they would have been exploited long ago; but there is an opportunity, now that the raiding has altogether ceased, for opening up these forests, which abound in rubber and elephants, and the southern portions of which are within two days' journey of Sulima.

Of course, I am well aware that one of the great difficulties for trade is the expense of transport, owing to the absence of good roads and continuous water carriage. Nature has debarred us from the latter, but I trust it will be one of the main objects of the Government to supply the former, and that in the future an endeavor will be made to form trunk roads through the protectorate capable of wheeled traffic. I see no reason, if such were constructed, why light carts, drawn by mules or bullocks, should not be used for transport; but, of course, the great obstacle is the expense of construction of such roads, but I hope in the future, when a revenue is derived from the protectorate from direct taxation, that means will be found for such works.

As you are probably aware, a protectorate will shortly be proclaimed over the British sphere of influence in the interior, and an ordinance will be laid before you shortly to provide for the administration of the protectorate. I shall not now go into any of its particulars, further than to mention that the protectorate will be divided into five districts, in each of which there will be a district commissioner, who will have considerable powers, and if the right men are selected for these posts, I have great hopes that there will be a rapid development of the interior, and such officers will be especially useful in directing the construction of roads and the establishment of ferries and all other works for opening up communications and thus facilitating and fostering trade.

IMPORTS OF JUTE AT DUNDEE.

The last direct importation of jute of the 1895–96 crop has arrived from India, and I am therefore able to furnish complete statistics of the season's shipments. During the period from October 1, 1895, fifty-six vessels, with a tonnage of 143,519 tons, arrived, bringing 1,317,267 bales. This is the largest importation ever made into Dundee for a corresponding period. Last season, the same number of ships brought 1,178,998 bales, which makes an increase for this year of 138,269. The average freight rate per ton for the season was $5.46 for steamers and $4.86 for sailing vessels.

During the last two months, twenty steamers have been chartered for new season's jute from Calcutta and Chittagong, the first fixture being from Chittagong at $5.46 per ton, the next at $4.25, and every succeeding fixture has marked a decline, until the unprecedentedly low rate of $3.34 has now been reached.

Annexed is an abstract of the number of vessels, their tonnage, and the number of bales of jute imported direct from India for the past ten years.

Years.	Number of vessels.	Tonnage.	Bales.*
1886–87	71	125,933	946,569
1887–88	72	126,825	994,193
1888–89	80	145,786	1,137,801
1889–90	69	135,729	1,118,661
1890–91	81	158,570	1,292,332
1891–92	50	97,193	820,990
1892–93	54	131,136	1,116,852
1893–94	57	126,566	1,059,278
1894–95	56	135,823	1,178,998
1895–96	56	143,519	1,317,267

*A bale of jute weighs about one-fifth of a ton.

For best marks, the prices in the Dundee market, during the period reported upon, have ranged from $50 to $62.50 per ton, second and third qualities being $5 and $10 per ton, respectively, lower.

The final forecast by the Indian Government of the growing crop has just been issued, from which it appears that it has suffered greatly from want of rain. In consequence, it is anticipated that the yield will be one-fourth below the average and that the quantity available for export to Europe will be between 2,250,000 and 3,000,000 bales.

Spinners here are well supplied at present, probably six months' stock being in hand, so that, so far, there has been no appreciable rise in the raw material; but when these stocks have been exhausted they must be supplied from the new crop, and it is thought that a considerable rise in prices will then take place. However, this will largely depend upon the state of the market for manufactured goods at the time.

JOHN M. SAVAGE,

DUNDEE, *August 25, 1896.* *Consul.*

EFFECT OF GERMANY'S COMMERCIAL TREATIES.

The Berliner Kaufmannschaft (Berlin Merchants' Association), in its annual report for the year 1895, which has just appeared, gives a very carefully prepared opinion on the effect of the commercial treaties concluded by Germany within the last few years. This report is well worthy of general attention.

The report states that, in the first instance, it must be conceded that the treaties have certainly had those favorable consequences for Germany's export trade which impartial judges predicted would result from them.

In the treaties with Austria-Hungary, Italy, Switzerland, Belgium, Roumania, and Servia, the advantage accruing to Germany was founded less on a radical reduction of the customs duties of the former countries than upon the agreement upon a fixed schedule of tariff duties for a number of years,

while the treaty with Russia has procured Germany, besides this advantage, a reduction of the tariff on many articles, which has proved of immense value to Germany and been the direct means of increasing her export trade.* In fact, the commercial and industrial activity which has been so apparent in Germany since 1894 is directly attributed to these treaties.

It is, as yet, difficult to form an accurate judgment of what the effect of these treaties has been and exactly how far they have benefited German trade.

The bad exchange value of Italian coin was an obstacle in preventing more noticeable results being obtained from the commercial treaty with Italy; the same was, for a time, the case with Austria-Hungary, as well as the uncertainty of credit in Roumania.

On the other hand, the tariff war between Austria and Italy which was waged until 1891 was of great benefit to German exporters, and on opportunity they did not fail to take advantage of. Further, the customs war between France and Switzerland, lasting from January 1, 1893, until August 18, 1895, may have greatly contributed to the increase of German exports to those two countries which a superficial observer would readily attribute to the German-Swiss commercial treaty and not to the nonexistence of a reciprocal treaty between France and Switzerland. The same view may be taken of the customs war between France and Italy, which ran during the existence of a commercial treaty between Germany and Italy, and undoubtedly benefited German exports to Italy.

As regards the changes made in the German tariff by the enactment of these several commercial treaties, no complaints have been made known to the Berliner Kaufmannschaft originating from manufacturing and industrial sources, hence these great interests would appear, as doubtless they are, well satisfied with the workings of the new treaties.

Agrarian agitators and the Agrarian press are loud in their denunciations of the concessions made by Germany in reducing the protective tariff on agricultural produce. While it is true that agricultural interests have had to suffer by these reductions, which, considering the fact that Germany is largely dependent upon foreign agricultural produce for her home consumption, were regarded as being a lessening of an unfair burden on the consuming population, still, in spite of the newly enacted commercial treaties, it is maintained that, in any event, the protective duties on such produce would have had eventually to be abandoned.

The German manufacturing and industrial interests, now enjoying the greatest activity, are believed to be on the threshold of still greater prosperity. This is evidenced by the fact that the Minister of Railways in Prussia has addressed in the press a letter to merchants and manufacturers, advising them to provide large supplies of coal for their factories in the event of the railways being, for want of sufficient coal cars, unable in the autumn and

*See "Effect of the Russian commercial treaty on Germany's exports," April 18, 1896, printed in CONSULAR REPORTS No. 189 (June, 1896), p. 262.

winter to execute in due time the large deliveries of coal anticipated. As an instance of the increase in the consumption of coal, Berlin may be cited. This city's consumption of coal during the first half of 1896 was 821,919 tons, against 632,734 tons for the corresponding period in 1895, an increase of not less than 30 per cent, of which 163,952 tons came from England, against 75,371 tons in 1895.

A résumé of the condition of Germany's manufacturing interests leads to a conviction that the policy of the German Empire in inaugurating in 1891 various commercial treaties has proved thoroughly beneficial to her industries and commerce and that the optimistic views of the Kaufmannschaft are founded on facts.

THOS. EWING MOORE,

WEIMAR, *August 14, 1896.* *Commercial Agent.*

GERMAN LAW AGAINST EXCHANGE SPECULATION.

Germany, under the pressure of the Agrarian party, has undertaken what other nations have been desirous of doing, viz, to check speculation on the exchanges, not alone in stocks, but also in food products, principally grain. Whether this will be accomplished by the new law, remains to be seen, and it will certainly be very interesting for other nations to watch the experiment. Below are given the most salient features of the law:

(1) No exchange can be established without the consent of the Government, which, through a commissioner, will exercise a continued supervision over its actions and dealings.

(2) A court of honor is created, which may exclude persons from the exchange after due trial. Parties who have been judicially declared bankrupt will be excluded for at least six months, and permanently, if the bankruptcy was fraudulent.

(3) When the listing of stocks or bonds is applied for at the exchange, a committee will make a thorough investigation of all circumstances affecting their security and desirability and will then decide whether they may be admitted. Before this is done, a prospectus must be published, giving all particulars of such securities. Stocks will not be admitted until one year after the entry of the firm name in the commercial register, nor before the publication of the balance sheet for the first business year. All parties who have signed the prospectus are legally liable for the correctness of the statements in the same, and must make good any loss or damage to the takers of such securities resulting from false, misleading, or omitted statements in the prospectus. Besides, they are liable to be criminally prosecuted if the circumstances warrant such proceedings.

(4) All dealings in futures or on term at the exchange are prohibited, unless the parties to the transaction are entered in the so-called exchange register. The original entry in this register costs 150 marks ($35.70) and an annual fee of 25 marks ($5.95) is exacted to keep the entry alive. The

register is public and can be inspected by any person. The entries are at once published in the Imperial Gazette (Reichsanzeiger) and the local official papers, at the expense of the parties, and a compilation of all names will be published once a year in the Imperial Gazette. Persons omitting to have their names entered in the exchange register have no legal claims against each other by reason of any term transactions. Such claims are considered in the light of gambling debts.

(5) The term business or dealing in futures in grain and mill products or stocks of mining and manufacturing establishments on the exchange is entirely forbidden.

(6) Whoever habitually and for selfish purposes induces inexperienced persons to speculate on the exchange in such articles as are outside of their sphere of business will be punished with imprisonment and a money fine not exceeding 15,000 marks ($3,570).

(7) With the exception of the paragraph referring to the exchange register, which will become operative on November 1, 1896, this law will go into effect on January 1, 1897.

As seen from the above, the main purpose of the law is to check speculative dealings on term, and, as far as this relates to stocks, its influence will probably be beneficial. As to term dealings in merchandise and forbidding term sales of grain and mill products, this remedy may prove to be of doubtful value. The produce exchange was created for want of an institution, the primary and main object of which was to facilitate the handling of agricultural products after the harvests and to distribute them over the entire year as the necessity arose. It is true that, with its development, such evils as "corners," dealing on margins, and other forms of speculation have also crept in, often much to the disadvantage of farmers and consumers. From a moral point of view, the effort to check gambling and illegitimate dealings on the exchange is very laudable, but how will this work in reality? In future, when the farmer, after the harvest, shall offer his crops to the dealer, the latter must be very cautious in naming a price, because he has no facilities of covering himself by term sales. The new law will not prohibit a dealer from buying "long" grain from a farmer or another dealer, if the bargains are consummated privately at the farm or the offices of the dealers, but will not allow that the terms of such bargains be publicly recorded. Thus the dealers really have no scale of prices except for "spot" grain, which fact prevents them from buying freely, and therefore necessarily exercises a depressing influence upon prices, especially after the harvest, when the pressure and necessity to sell are greatest.

It becomes, at a glance, apparent what a terrible blow this law is to the produce exchanges, and nobody can foretell what will hereafter become of them. The dealers are very much alarmed, lest it may threaten the very existence of these time-honored establishments, and, what is worse for them, may wipe out Germany's influence and importance in the international markets and induce German capital to remove to foreign countries. Although the Agrarians expect many advantages, especially a rise in the price of grain,

from this law, they have so far been disappointed, because, since the law was passed, the prices have moved in the other direction, no doubt greatly influenced by the lack of enterprise occasioned by the damaging influences expected by its operation.

The export of grain from the United States to Germany will also suffer, because the German dealer can not now buy great quantities at a time, for the reason that he can not cover himself in advance by term sales.

Another interesting feature of the law is the establishment of the exchange register, or gambling register, as it is commonly called. The term business in grain and mill products on the exchange is forbidden by the law, as I have mentioned before, but the term business in stocks or other farm products is allowed, provided the parties to the transaction enter their names in the exchange register. As the latter is on public record, secret gambling on the exchange by private individuals is thereby done away with, because a private party can not afford to have his name publicly exposed in the gambling register, and a dealer can not venture to do business with a party against whom he could not press a claim. Even a deposit will not protect him, because he can not touch it, having no legal claim against the speculator. This feature of the law really appears to be a good one, because it will prevent private individuals from speculating in things of which they know nothing, a speculation which has seldom brought wealth, but often ruin and shame to a man and his family. The dealers naturally dislike this very much, because it robs them of the opportunity of continuing to shear the lambs. They say that, without outside speculation, it will be very difficult to dispose of such enormous crops, as, for instance, the sugar crop, and that the keeping away of private speculators can not but have a depressing effect upon prices. This is no doubt true to some extent; but, on the other hand, the moral advantage of keeping innocent outsiders away from the demoralizing influences of exchange gambling in a thing worth trying, and if this feature of the law succeeds it will indeed be a blessing. But human ingenuity will probably also find a way to get around this stipulation of the law, and I should not be surprised to see the German lambs go speculating in London or Paris or Vienna hereafter, carrying not alone the commission, but also their wool to foreign countries, instead of letting their German countrymen do the clipping, as heretofore.

The establishment of the exchange register will necessarily diminish transactions at all German exchanges, thus curtailing their importance and influence on the world's markets in general. It will no doubt also tend to drive considerable money and business to foreign countries, much to the detriment of German commerce.

The general opinion is that the law, in its present form, will not stand, but must be modified in many ways before its effects will be less detrimental to commerce in general than corrective of the evils which it is intended to remedy.

JULIUS MUTH,

MAGDEBURG, *August 31, 1896.* *Consul.*

AMERICAN SHOES IN GERMANY.

The Berlin correspondent of an American press association has been at pains to telegraph home the substance of a recent article in Der Schuhmarkt, a trade paper published at Frankfort, which attempts to contradict the statement made in a consular report from this office to the effect that there is in Germany a practicable market for certain kinds of American-made shoes.* The assertion of Der Schuhmarkt, as summarized for the American press, is in substance that—

> No market exists in Germany for American boots and shoes, for many reasons. German machinery for the manufacture of boots and shoes is as perfect as the American machinery, and the shapes worn in America would not do here.

The zeal with which this article has been circulated and its republication, with editorial comment thereon, in the press of both countries reveal fully its motive and real value. The Schuhmarkt is, or aspires to be, the organ of the shoe manufacturing industry in Germany. It lives by the patronage of that special class of manufacturers, and one of its duties is to warn off from their territory all intruders and protect their home market from foreign competition, especially American competition. Its editor probably realizes that American shoes, if once fairly introduced, would prove as difficult to dislodge from the German market as American sewing machines, bicycles, typewriters, and base-burning stoves have been, and for the same reason—they are better than can yet be made in this country.

It is true, as he says, that German manufacturers have imported or copied most kinds of shoemaking machinery now in use in the United States. But they have not yet—notwithstanding all the progress that they have made during recent years—learned to organize their factory system and use the new machinery as skillfully as is done by the best American makers, and their product, in the opinion of experts whose judgment is conclusive, still lacks some of the substantial quality and the elegance of form and finish that characterize the best American-made shoes, and this, the show windows of any German shoe store will clearly prove.

That the better class of customers in this country—people who appreciate and demand the best that can be had of everything that pertains to dress and the comforts and luxury of life—have welcomed the introduction of American-made shoes, is affirmed not only by observation, but by the testimony of numerous dealers who are practically familiar with the trade. Among the numerous letters that have been received at this office from German importers and dealers who approve and confirm the now challenged consular report, is one from a merchant in northern Germany, a man of the highest intelligence and responsibility, who was a member of the imperial

* Printed in CONSULAR REPORTS No. 190 (July, 1896), p. 508.

German commission to the Columbian Exposition in 1893, and who now writes:

During my stay at the World's Fair in Chicago, I had the opportunity of appreciating the superiority of the American shoes over our German make.

Mr. F. F. Stanley, head of the Stanley Manufacturing Company, of Boston, who has a branch house at Frankfort, and who has recently returned from a visit of three months to Germany, gives the following information to the Shoe and Leather Reporter, and the same appears on page 585 of that journal of September 3, 1896:

* * * Within a few years, German shoe manufacturers have learned that their competitors in the United States can actually make shoes cheaper than they can be made anywhere else in the world and that there is nothing to-day but the inactivity of the American manufacturer as a merchant which prevents him from underselling the German in the latter's own country. They have been very ready, recently, to learn how this can be done. They have been quick to see that it is the result of the superior factory organization of the American, of the better use of machinery, and of the greater skill that comes from the use of this machinery. As a rule, the German manufacturers are now quite ready, quite willing, in fact, quite anxious, to reorganize their factories on the American plan and to put in American machinery as rapidly as their workmen can be taught to use it.

* * * It has been reported during the past summer in Berlin that a firm of leading manufacturers of Philadelphia are about to open a large retail store in that city. The goods manufactured by this and several other enterprising American firms are on sale in all of the larger cities in England and Scotland, likewise in Paris. Wherever American shoes have been introduced into Europe, their superior quality, low price, and improved form have given them quite ready sale.

The correspondent in Germany of the American Shoe and Leather Reporter, writing to that journal under date of August 1, 1896, says:

American shoes are eliciting a great deal of attention here, and the subject has been widely commented on. Shoes are imported from the United States by a large house here. They are of the best grades, and are much superior to any of our own manufacture. I receive daily inquiries from shoe dealers and requests for the addresses of large American houses. There are, however, many difficulties in the way of obtaining German markets for those unfamiliar with them; and Americans must remember that it will take patience, time, and capital before a steady volume of trade can be obtained.

This paragraph describes precisely the existing situation. A demand for American-made shoes exists and will continue to exist until the German manufacturers fully attain the high standard of excellence, combined with cheapness, that has been reached by the best makers in the United States. That they will eventually do this, is more than probable. Not only do they now use American shoe machinery, either imported or copied from American models, including the lasts and forms which the Schuhmarkt insists are so impossible for German feet, but there is hardly an enterprising shoe manufacturer in this country who has not in hand a line of samples of American-made shoes for his own information and the emulation of his workmen. There is now in construction in Wurtemberg a new factory for the special manufacture of the "Goodyear welt" and other standard types of American shoes.

There is, moreover, a considerable and steadily growing import of ready-made shoes into Germany from Italy and Austria-Hungary.

Whether the more or less permanent opportunity which now exists in this country shall be utilized or not will depend entirely upon the enterprise, energy, and intelligence of American shoe manufacturers in organizing to work this field, as the Germans have organized in so many branches of their industries, and are working to its full value every opportunity for export trade in England, South and Central America, Asia, Africa, and notably in the United States.

FRANK H. MASON,

FRANKFORT, *September 16, 1896.* *Consul-General.*

BICYCLING IN SPAIN—MARKET FOR AMERICAN WAX.

It is only during the past year that bicycle riding has excited the public interest to any great extent. Although, for years past, the wheel was known, still very few riders were seen; the people not being used to much exercise, did not care to sacrifice their comfort, and hygienic laws are generally not much considered in a country where a salubrious climate spoils the people.

However, of late, bicycle riding has become a sport in this place. At first, it was the lower and middle classes who indulged in this healthy exercise, and although the fashionable class still shows indifference, the taste for it is spreading little by little and particularly among the younger members, boys and children being captivated by it. As for ladies riding the wheel, it will probably be years or another generation before it is countenanced here. The sedentary life of the fair sex in this country can not easily be overcome, in spite of examples and a full appreciation of the beneficial results. In my opinion, the use of the bicycle by the ladies of Spain will help toward removing that barrier which prevents them from going out unless attended by some responsible duenna; it will give them more courage and independence.

There are three rings now in this city where a good course is kept, and one depot or store, with show windows, where bicycles are sold.

So far, the wheels sold here have been of French and English manufacture. German wheels were excluded on account of the high tariff duties existing between the two countries. American wheels are not known here, in spite of several advertisements to the contrary, which, after investigation, proved to be of an inferior wheel of French make called "l'Americaine" and showing an American spread eagle with the United States coat of arms as an advertising sign on its frame.

As the development of this sport was started by the poorer class here, many wheels were spoiled through lack of appreciation of a neatly manufactured machine. Moreover, a low price was required to meet such demands, hence only an inferior make could be sold. However, the French and English wheels have paved the way for American manufactures, saving much waste of good material. Now that a better appreciation on the part of the

public exists and a wealthier class of society is interested in the sport, people are becoming tired of an inferior make and call for something solid, handsome, light, and not too dear. At this point, it is time for the American wheel to appear and meet this demand.

Of course, a strong competition has to be expected; moreover, the high freight from America to Spain will be an obstacle, yet sufficiently good prices are paid by the public to warrant the risk of transport. A trial has just been made with an American wheel, but although superior in make, it will hardly be able, as regards price, to stand the competition of European bicycles, since its sale passes through the hands of two agents, a general European and a special Spanish agent. Transactions must be direct with a Spanish buyer or through one agent alone. Better still would be a plan of offering the American wheel to the public here on the same principle as sewing machines are sold, *i. e.*, paying by weekly installments, binding the buyer, however, to a written contract. This would place these wheels at once at the head of the market and be a safer plan than the one French firms work upon, viz, twelve months' credit.

The shoemakers of this city show a decided preference for a quality of wax bearing the inscription of "superior American wax" and exhibiting the brand of a small shield, with the United States Stars and Stripes, as well as a small shoe. The various importers here receive this article from Barcelona. They doubt, however, if this wax comes from the United States, but declare it to be of European origin. It remains to be seen if an American factory of this article keeps a deposit of its goods in Barcelona for sale throughout Spain, or if an infringement upon the rights of an American manufacturer has been committed by a European competitor in copying the former's brand. At all events, it appears that the American brand must have been the original one, and, as can be gleaned from consumers here, this brand alone is preferred to any other offered in this market from European countries. If the wax used here now proves to be an imitation, American manufacturers ought to step in and take the field already conquered by their brand. The European manufacturer will then have to sail under his own flag.

Consumption of this kind of wax in Valencia amounts to about 2,000 kilograms per year, and the price it is sold at from Barcelona is 3.10 francs (60 cents) per kilogram (2.2046 pounds) for the white kind and 2.50 francs (48.25 cents) per kilogram for the black, delivered at Valencia, with sixty days' credit and 2 per cent discount.

There are about six firms here who devote themselves to importing this article. If other cities of Spain show the same consumption or more, it would be worth while to investigate this matter, since the manufacture of shoes in this country is considerable and the export, particularly from Barcelona to the colonies, is of some importance.

THEODOR MERTENS,

GRAO, *August 23, 1896.* *Consular Agent.*

DEMAND FOR BICYCLES IN BAVARIA.

The bicycle question is one of the leading topics of discussion just now in this part of the world; in fact, it may well be said that a genuine bicycle "craze" has struck Bavaria. The old and the young can be seen daily in back yards, vacant lots, and along country roads desperately struggling to maintain an equipoise upon this very unruly little machine, and the apothecaries, consequently, are all driving a brisk business in liniments and court-plasters.

A short time ago, it was not considered at all proper here for ladies to appear on bicycles, but the strong prejudice which existed has been gradually giving way, and now the ladies, married and single, and the young girls are rapidly becoming enthusiastic devotees of this outdoor sport and exercise. So rapidly has the bicycle grown in favor here that the two factories which have been running for some time, finding themselves quite unable to meet the demand for wheels, have begun to increase their capacities very largely. Even better evidence of this demand lies in the fact that two new companies have just been organized and have already commenced the building of plants still larger and with much greater capacities for turning out work than those now in operation, and they expect to have the same in running order before the end of the present year.

In view of the growing demand, these companies are anticipating large sales, and, should the craze continue to increase as rapidly as it has been doing in the last few months, next spring a good many thousand wheels will find easy sale among the 6,000,000 inhabitants that constitute the population of this Kingdom.

Here, then, seems to me to be an opportunity for the American manufacturer. Why should he not come in for a share of this business? From what I gather from personal observation and investigation, I feel quite sure it will be wholly his own fault if he does not.

Already, the people are discussing the merits of the different makes of bicycles, and several persons here have expressed, in my hearing, a desire to have American-made wheels, and I may add, further, that a prominent resident of this city has already consulted me as to what course he should take to become agent for some good American company.

This same person stated that he saw the drift of things and felt certain that the American wheel would sell more easily and readily than that of either the German or English make. The demand for wheels is not confined to this district alone, but it exists generally throughout the entire Kingdom.

I find that in Munich, the capital city, with a population of nearly 500,000, the same demand exists, and that good wheels are sold there at an exceedingly high price and are even then difficult to be had.

My attention was more particularly called to the question of American bicycles by the appearance here, a short time ago, of a party of three New Yorkers riding American wheels. The trim, light, graceful appearance and style which characterized these wheels at once attracted the attention of everybody and easily convinced me that such machines would have little difficulty in competing for trade in this market.

This is just the country for the bicycle; the roads are magnificent—hard, smooth, and clean, thereby making riding a real pleasure. The question then arises, How can the American wheel be introduced here? It is of no use to write letters asking for lists of names of persons to whom catalogues, circulars, etc., may be sent. That will avail nothing, for the German will not buy without first seeing the goods. The proper and only course to pursue is to establish agencies. Reliable persons can easily be secured to act in that capacity. Let the manufacturers send their machines here, so that the people can see what they are buying and have a chance to try them; let them send carefully and honestly made machines, to be sold at a fair and reasonable price, and there will be no difficulty at all about the sales.

In the matter of customs charges, the manufacturer would meet with no difficulty, as these are assessed according to weight and the duty amounts to a merely nominal sum, from 4 to 6 marks ($1 to $1.50) on each wheel. The wheels should be fully equipped with all the usual and necessary paraphernalia, such as lamps, bells, brakes, mud guards, etc., and all these should be covered in the selling price, as the German never likes the idea of having to pay for a lot of extras.

Now, this is the whole story in a nutshell, and I give it to the American manufacturer as the result of my personal observation and investigation; I do not hesitate to say, as I have already intimated above, that I believe now is the time to strike, for the iron is indeed hot, and the American manufacturer who is on the spot first, and the sooner the better, will be the man to reap the harvest.

HENRY C. CARPENTER,

FÜRTH, *September 9, 1896.* *Commercial Agent.*

AMERICAN MOHAIR IN BRADFORD.

There has been on exhibition at this consulate for the past week an American-grown mohair fleece forwarded to Bradford by Mr. C. P. Bailey, of San José, Cal. The fleece is that of a two-year-old graded doe and is understood to have been grown on Mr. Bailey's ranch in Nevada. The quality of the hair has been the wonder of all who have seen it here. It has been closely examined by several of the leading mohair dealers and importers, all of whom have expressed the highest opinion of it. One of them (Jonas Whitley, esq., ex-mayor of Bradford), said:

I have now in my warehouse about $200,000 worth of mohair, both Turkey and Cape, and I am entirely sincere when I state there is not a better fleece in the lot. I will buy all

the American mohair like that that may be offered me at the market price. Should it uniformly equal this fleece, I do not know but what I would pay more than the market price. It is remarkable in being almost free from kemp and I do not know that I have ever handled a fleece with so little kemp in it. The amount of noil is also less than usual, which is very important, as it leaves more weight in long staple to go into tops. I say unhesitatingly that the sample fleece before me is as good mohair as there is grown.

All the experts who examined the fleece particularly complimented its luster, the quality of the hair, the good length, and the weight. The only criticism was (and this was not alluded to by all), there was a little deficiency in color, the ends of some of the clip being brown or urine stained. It was pointed out, however, that this was not a serious difficulty, as in sorting or classing the brownish tips could be used for lots which were to be made into colored goods. The opinion of all was that the hair ranked fully equal with "Cape" and good "Turkey average." The fleece sent weighed 5 pounds and was alleged to have been picked at random, while Turkey fleeces do not average over 3 pounds in weight. The price of the mohair sent for inspection was 26 cents per pound when it left the United States. "Cape firsts" are now quoted at 28 cents and "Turkey average" at 31 cents per pound.

The Bradford mohair trade is thoroughly surprised at the merit of this sample, saying that it has every quality of the best mohair, with the trifling defect of the brownish tips. Breeders are strongly recommended to keep up the quality and color, and if such fleeces can be produced in quantities, the triumph of the United States as a mohair producer is assured. It is stated that Mr. Bailey, who grew the sample fleece in question, has flocks averaging constantly eight thousand to ten thousand goats. Most of his product is marketed in New York and Boston. Many of his rams have been exported to South Africa (the Cape), with splendid effect upon the strain of angoras produced there.

CLAUDE MEEKER,

BRADFORD, *September 23, 1896.* *Consul.*

BRITISH CHAMBERS OF COMMERCE AND THE CONSULAR SERVICE.

Referring to my dispatch of August 9, 1895, inclosing a report on the subject of "England's consuls," and the action of the Association of Chambers of Commerce of the United Kingdom in relation thereto,* I now beg respectfully to transmit a copy of a circular embracing the replies of several chambers of commerce and the comments of the British Foreign Office thereon.

CLAUDE MEEKER,

BRADFORD, *September 8, 1896.* *Consul.*

* Printed in CONSULAR REPORTS No. 182 (November, 1895), p. 300.

CIRCULAR NO. 363.—BRITISH CONSULS AND FOREIGN TRADE.

ASSOCIATION OF CHAMBERS OF COMMERCE OF THE UNITED KINGDOM,
1 GREAT COLLEGE STREET, WESTMINSTER, S. W.,
August 20, 1896.

DEAR SIR: I beg to inclose copy of the official correspondence with the Foreign Office respecting the instructions given to Her Majesty's diplomatic and consular representatives respecting commercial matters, together with a summary of the suggestions received from various chambers of commerce connected with the association on this subject and specific recommendations as to the collection by British consuls of samples of goods for which there is a considerable sale in the districts in which they are located. The executive council will be glad if you will bring this correspondence before your chamber, so that the communication from the Foreign Office may receive due consideration.

I am, dear sir, yours faithfully,

EDWARD W. FITHIAN,
Secretary.

[Inclosure 1.]

ASSOCIATION OF CHAMBERS OF COMMERCE OF THE UNITED KINGDOM TO THE MARQUIS OF SALISBURY.

1 GREAT COLLEGE STREET, WESTMINSTER,
July 15, 1896.

MY LORD: Referring to the letter which I had the honor of sending to Your Lordship on the 31st of March last respecting the assistance which can be rendered by Her Majesty's diplomatic and consular representatives to the development of British trade abroad, I am now directed by the executive council of this association to forward the inclosed summary of replies received from chambers of commerce.

The executive council trusts that the suggestions contained in these communications may obtain the favorable consideration of Her Majesty's Government.

I have, etc.,

EDWARD W. FITHIAN,
Secretary.

[Subinclosure in inclosure 1.]

BRITISH CONSULS AND FOREIGN TRADE.

In response to the circulars issued by the association respecting the instructions given to Her Majesty's diplomatic and consular representatives on commercial matters, the following communications have been received from chambers of commerce connected with the association:

Cardiff.—This chamber makes the following recommendations:

(1) That the reports should be printed and issued as early as possible in each year. Certain delay could at once be obviated if the Foreign Office issued these as soon after their receipt as possible. For example, the report for the year 1895 on the trade of the consular district of New York has not been received yet (the 13th of April, 1896). Although the report when received will be of great value, still if received by the end of February, it would be even more useful.

The foreign consuls at Cardiff have all had their reports in the hands of their governments some time since, and the Russian consul will in a few weeks have issued a special report, setting forth full particulars of the coal trade of South Wales (hours of labor, wages, the working of the sliding scale, etc.). Such reports issued promptly are invaluable to our foreign competitors and thus place us at a disadvantage.

(2) In some, the exports and imports (foreign trade) are valued in English sterling. This should be done in all cases. The values of each principal article in the tariff should be given, and the coasting trade values should be carefully separated.

(3) As regards coal, (*a*) the output per annum for the whole country, *e. g.*, America, Germany, France, Belgium, etc., is sometimes dealt with by the consul-general or attaché at the capital city; (*b*) as the import or export of coal, however, is made at each port separately, the consul at such port could include it in his report, where at present omitted. In both cases, it would be desirable for ready comparisons to have the returns in long tons (2,240 pounds).

(4) A most important point is to have the shipping returns of each port more divided, *e. g.*, under the separate headings of foreign and coasting trades, and subdivided into cargo and ballast sections. It would be well to give the tonnage as per English net register, or explain the nature of the ton given.

In framing the reports, matter having an actual or even a possible bearing on the British trade should receive special attention. For instance, it would be of great value, both to the chambers of commerce in this district and on the east coast and in Scotland if coal was more fully dealt with.

Hull.—This chamber is of opinion that the five recommendations forwarded by the association to the Foreign Office on the 2d of December, 1895, practically cover the whole ground. The only suggestion they would venture to make is that the information should be given as promptly as possible, if necessary even by telegraph, and that the reports should be published without loss of time.

Leeds.—In the opinion of this chamber, the present instructions to consuls are sufficient for the purpose if carried out, but that care should be taken by the Government as to the selection of the consuls themselves. The chamber suggests that it might be well to appoint one or more gentlemen, with special commercial qualifications, as traveling consuls, who would be in touch with the wants of the commercial classes here.

Barrow-in-Furness.—This chamber suggests that the Foreign Office should take into consideration the expediency of selecting as consuls and vice-consuls men of business training and experience, with a thorough knowledge of the language of the country for which the appointment requires to be filled up, and, where practicable, an Englishman resident in the district in question, providing his qualifications in all other respects are satisfactory.

Newport.—This chamber is of opinion that—

(1) The existing instructions to British consuls abroad are adequate, but are not carried out.

(2) That the belief expressed in the letter of the Glasgow chamber, 19th of March, 1896, to the Earl of Rosebery goes at once to the root of the matter, viz: "That benefit would ensue to the trading interests of this country if the selection of gentlemen for the position of British consuls was made with greater regard to their special fitness and aptitude to grasp and deal with commercial affairs and from among persons in sympathy with business pursuits, in preference to those whose qualification is derived from naval or military service."

(3) That it is desirable that the system of the United States Government should be adopted of instituting either as collateral to or in substitution for the British consular system that of commercial agents who should be, as is the case in America, required, whenever called upon to do so, to report exhaustively upon trade and commerce, either in their isolated or general phases or developments, together with all or any new departures as regards the treatment of raw materials or the production of the finished article, and also as regards the question of labor and wages.

Blackburn.—This chamber recommends that British commercial attachés should be added to all our embassies.

Edinburgh.—In the last issued Danish consular report there is a reference made to co-operative curing houses, which are said to have contributed greatly to the improvement of the bacon exported from Denmark, both in respect of quality and quantity.

It is worthy of remark that the export of bacon, butter, and eggs from Denmark is rapidly increasing. The agrarian interest in Denmark is powerful, and is now pressing their Govern-

ment to give increased facilities, especially as regards the export of butter. To this end it is proposed to subsidize steamers which may adopt a refrigerating system, so as to enable butter to be conveyed across sea in summer at a constant temperature of 45° to 50° F.

Complaints are made by foreigners and by merchants in our own colonies of the indisposition of our manufacturers to adapt the style of their wares to suit the taste or convenience of their customers. In this respect, other nations, and especially the Germans, appear to have acted with more judgment. They have taken pains to ascertain the requirements of certain markets, and have modified the manufactures accordingly. In this it is understood they have been aided by the careful reports of the consuls, who give valuable suggestions for the guidance of their countrymen at home, and the general opinion seems to be that in this respect our consular service is defective. Probably it might be useful if the attention of the Government were called to this question.

COLLECTION OF SAMPLES BY CONSULS.

In answer to the suggestions contained in the letter from Lord Salisbury to the association, dated 16th of April (see circular 352), the following communications have been received:

Bradford.—Desires that the consuls (especially those resident in countries which are not frequently visited by British traders) should be requested to forward samples of all articles of important consumption, composed wholly or partly of wool, whether yarns or woven fabrics—(*a*) produced in the country itself, (*b*) imported from foreign countries, together with the following information, which might be given either in a separate return or (preferably) on tickets attached to the samples: (1) The wholesale price at which the goods are sold; (2) whether the price named is inclusive or exclusive of import duty; (3) the rate of import or other duty leviable on the goods; (4) in the case of textiles, the width of the goods, and, if possible, the weight per yard and the lengths in which the pieces are usually imported or sold; (5) if imported, the country of origin; (6) the quantity or value of the goods imported or produced in a given year; (7) any other interesting information, such as mode of making-up, packing, etc. Such samples would, in the vast majority of cases, be neither expensive nor bulky, and, as a rule, would be given freely.

It would be extremely useful if the consuls would forward annually a return showing whether British trade in such goods with the country to which the consul is accredited is gaining or losing, and the causes, as far as can be stated, of such loss or gain.

Batley.—Respecting the special trade of this district, viz, the manufacture of heavy woolens and blankets at comparatively low prices, the chamber suggests that the consuls should obtain samples and patterns of the various classes of woolen fabrics in use in the countries where they reside, and particularly such classes (native or imported) which hold the market against British competition. Such samples need not be large or costly—half-yard lengths the full width of the cloth would be ample. The weight per yard or meter and the price for which it is sold by the importer or native manufacturer should, if possible, be given. The countries from which it is desirable to obtain patterns for this district are, speaking generally, the more remote and less-frequented ones, but the following may be specially mentioned, viz, China, Japan, India, and the more important native states of Asia, Turkey, Egypt, Mexico, and the various states of Central and South America. With respect to traveling and carriage rugs (a new branch of manufactures, but one that is assuming considerable proportions), it would be necessary in sending home samples to send entire rugs.

Blackburn.—The chamber suggests that samples of goods of foreign manufacture should be forwarded as soon as received to those chambers of commerce most nearly interested in their manufacture.

[Inclosure 2.]

FOREIGN OFFICE, *August 7, 1896.*

SIR: I am directed by the Marquis of Salisbury to acknowledge the receipt of your letter of the 15th ultimo inclosing a summary of the views of the chambers of commerce connected

with the association, on the general question of official assistance to persons engaged in commercial enterprise abroad, and on the subsidiary question of the sufficiency of the instructions which have from time to time been issued by this department to Her Majesty's diplomatic and consular officers in regard to that subject. It is gratifying to Lord Salisbury to find that, on the whole, the commercial community of this country recognize that their reasonable requirements are met by the present instructions, which they have now had an opportunity of examining, and that it is only to a few minor points of detail that they deem it necessary to call attention. Bearing in mind the exhaustive investigation to which the whole question was subjected in 1886, and the subsequent occasions on which it has been discussed in the House of Commons and elsewhere, His Lordship entertained but little doubt that this would be the practical outcome of the inquiries that it was suggested by this department should be made, and which you were good enough to carry out. With these preliminary remarks, I will pass on to the consideration of the various recommendations of the chambers of commerce, taking them in the order in which they stand in your letter under reply:

Cardiff.—(1) The reports of Her Majesty's representatives abroad, as you were informed in my letter of the 12th of December last, are printed and issued with all possible expedition after their receipt at the Foreign Office. It is considered desirable, whenever possible, to give the writers themselves an opportunity of revising their proofs, and on such occasions they frequently add information that has come to their knowledge since their report was first drawn up. Many gratifying tributes have of late years been paid both by the press and the public to the promptitude with which the reports are issued. Every effort is, moreover, made to insure their being sent home at as early a date as possible after the expiration of the year with which they deal, but much depends upon the date when the necessary statistical data are available in foreign countries, in many of which the systems are by no means so perfect as they are in Great Britain. This circumstance alone would fully account for the advantages which the foreign consular representatives at Cardiff enjoy, and to which the chamber of commerce in that town allude. It would be altogether unfair to compare their position with that of a British consular officer in some remote region, where reliable statistical information is either altogether inaccessible or not obtainable until after a long lapse of time.

As regards the specific case of the report from New York, to which reference is made by the Cardiff chamber, it was issued on the 23d ultimo, or a week after the proof had been returned corrected by the consul-general in that city.

(2) Her Majesty's representatives have received, as you are aware (Foreign Office circular, 17th of May, 1889), very stringent instructions to convert all foreign money, weights, and measures into their English equivalents, and in the rare instances when they fail to do so, their attention is at once called to the omission. The remarks from the Cardiff chamber will, however, be again brought to their notice, but it may not be out of place to remark, with regard to money, that it is difficult in financial reports from countries—such, for example, as Greece—where the exchange is liable to constant fluctuations to determine a fixed rate for conversion that conveys a clear appreciation of the purchasing power of money. Only a few years ago, in reviewing a report from Her Majesty's legation at Lisbon, in which all currency had been converted into sterling in compliance with instructions, a leading financial organ of the press took occasion to strongly deprecate the new departure, arguing that those engaged in trade with Portugal would understand and appreciate the figures more had they been stated in currency. This incident is cited to show that the point is one with regard to which a difference of opinion does exist, but in order, as far as possible, to satisfy divergent views, the instructions above cited provide that all important figures should be given both in currency and sterling.

(3) The observations with regard to coal, both under this number and in the concluding paragraph from the Cardiff chamber, will be brought to the notice of Her Majesty's consuls, who, however, do, as a rule, state the quantity and value of the imports and exports both of coal and of other articles in which there is any considerable trade at the ports where they are stationed.

(4) Provision is already made in the form of return of British shipping used by Her Majesty's consuls for separating the cargo and ballast figures. Consular officers will be desired to distinguish coasting trade from other categories of shipping as far as circumstances permit. It is fair, however, to observe that in many places this practice has already been followed.

Hull.—The remarks already made on Cardiff (1) apply equally to the recommendations from Hull, and it is only necessary to add that such pieces of information as can properly be furnished by telegraph—as, for instance, changes in imposition of quarantine or changes in customs regulations, etc.—are invariably transmitted in that manner, and immediately made public in this country.

Leeds.—In connection with the question of consuls traveling, to which the chamber in this city alludes, the fact is too often altogether overlooked that a British consular officer at a seaport has perhaps three times as much shipping business to attend to as the consular representative of any other nation. This work necessitates constant personal attendance at an office, and is incompatible with the discharge of duties that appertain to a commercial traveler. Nevertheless, it is believed that the wishes of the Leeds chamber, as well as those expressed with regard to commercial attachés by the chambers at Blackburn and Newport, will, in great measure, be met by the arrangement under which additional officers of that category are about to be appointed, as stated in the House of Commons in reply to Col. Sir Howard Vincent on the 27th instant.

Nevertheless, the work of the bona fide commercial traveler must continue to appertain to the sphere of private commercial enterprise, and can not either legitimately or with advantage be usurped by the State; and it is Lord Salisbury's belief that in well-directed activity of this description, to which chambers of commerce, no less than private firms and mercantile associations, can in various degrees contribute, will be found one of the surest means of promoting British commercial interests in foreign parts.

With regard to the observations emanating from Leeds, Barrow-in-Furness, and Newport respecting the class of men who should be chosen for consular posts, I am to observe that—although it is the duty of consular officers to render all the assistance in their power within certain limits (that have been defined in the correspondence published in 1886) to British trading interests abroad, and although their qualifications in that respect are duly considered at the time of their selection—it must not be forgotten that there are other functions which they are primarily appointed to carry out, that have also to be borne in mind, and for which their suitability has to be weighed. At the present time, it is almost an invariable practice to examine a consular officer on first appointment in mercantile and commercial law, as well as in the language of the country in which—on satisfying the civil service commissioners in these and other subjects—he will reside.

The Newport Chamber of Commerce commence their remarks by asserting that the "existing instructions to British consuls abroad are adequate, but are not carried out." Past experience has shown that assertions of this kind, in general terms, are often made on very slender grounds. This department does very strongly insist that if grounds for complaint exist they should be specified, when they will—as you have more than once been assured—be promptly investigated. In the absence of such particulars, it is neither possible to investigate the complaint nor to determine whether it is well founded or otherwise. In the meantime, the Newport Chamber of Commerce should be called upon to substantiate their assertion, if they are able to do so.

Edinburgh.—The third paragraph of the paper from the chamber in this city seems to imply that Her Majesty's consuls are remiss in supplying suggestions for the guidance of their countrymen at home. The only inference to be drawn from this remark is that neither the reports themselves, nor the extracts from them that appear in the press, have been studied by the Edinburgh chamber with the attention that it is fair to ask from those who undertake the work of criticism. If the Edinburgh chamber would study the index to consular reports under the heading of "Trade, etc., suggestions for improving," and consult the references

there supplied, Lord Salisbury is inclined to think that their views, as expressed above, may undergo some modification.

Abundant evidence could, if necessary, be adduced to prove that the views of the Edinburgh chamber as to the value of British consular reports are not those which are generally entertained. In support of this view, their attention might be called to an article in the Textile Recorder, of Manchester, for the month of April last, copy of which is inclosed. This article has been chosen—from a large number of an equally complimentary nature—because the United States consul at Bradford has seen fit to quote it in extenso in a recent report to his Government.

It now only remains to refer briefly to the question of samples.

As you are aware, the suggestions made in regard to these have already, in many cases, been carried out. Only recently a large assortment was sent home with the commercial report from Zanzibar, some articles in which were sent to your association, others to Manchester and Dundee. But the attention of Her Majesty's consular officers—especially in the countries enumerated by the Batley chamber—will be again called to the subject, and they will be instructed to carry out the wishes expressed by the chambers at Bradford and Blackburn, so far as circumstances permit. It is thought that in the majority of cases samples received from abroad may most conveniently be distributed by your association, but, as you are aware, there are other important chambers—not connected with the association—whose wishes and requirements have to be borne in mind.

It will also be desirable that this Department should be informed from time to time of any particular samples which the association may desire to obtain from abroad.

Lord Salisbury would feel obliged if you would take steps to make the contents of this letter known to the chambers of commerce who have been good enough to offer recommendations and suggestions on the various points with which it deals.

I am, etc.,

GEORGE N. CURZON.

[Subinclosure in inclosure 2.]

EXTRACT FROM THE UNITED STATES CONSULAR REPORTS FOR MAY, 1896, VOL. LI, NO. 188, P. 143.

British consular officers and trade.—Under date of Bradford, April 17, 1896, Consul Meeker writes: "I forward herewith an article taken from the April issue of the Textile Recorder, of Manchester, England, recognized as one of the leading trade journals of its class in this country." The article, headed "The duties of consular officers," says:

"In the reports of Her Majesty's consuls at Havre and Calais, notice is taken of the complaints which are made of the alleged inattention of our consuls to the commercial interests of this country. It is frequently stated that in this respect our representatives compare very badly with those of other countries, who are at times depicted as a sort of conglomeration of all trades. We take leave to doubt that this is at all an accurate picture, but there appears to be reason to believe that in many respects the consuls of other states do more in this direction than ours. Of all the ineffective ways of pushing a trade, that of sending trade catalogues to the various consuls is the worst, especially as these are simply those circulating in this country. Of what use is it to send to Russia or Italy, for instance, a priced catalogue, in which the descriptions, specifications, and quotations are all in English? What the customer wants is a catalogue from which he can extract all the necessary information in his own language and with the prices given in his own currency, including freight and duty. When these documents are prepared, it is idle to send them to consuls for display, just as we are convinced the dispatch of technical journals to the same quarters is. Few people going to a consulate have the time to spare to look at them; they are there for other purposes. Besides, it is too much to expect a consul to be an exaggerated commercial traveler. These duties should be del-

egated to the right persons, who should be, as Mr. Consul Keane, of Calais, says, persons 'with the persuasive manner of the well-trained traveler or agent of other countries, of Germany especially, who has made a study of the business habits and requirements of the several districts he visits.' Traders in this country will have to look to it, and if objection be raised on the score of expense, then it may be pointed out that other countries get over the difficulty by the combination of two or three firms in different departments. What we ought to look for is the acquisition of consuls who will make it their duty to do what their American and German brethren do—collect the fullest information on the trade of their districts and transmit it. We have from time to time published reports from American consuls which have been mines of information, such, for instance, as the one dealing with the growth of cotton in Turkestan. No one who has watched the change in our Foreign Office reports during the past few years can have failed to be struck by the gradually increasing commercial element. This has become very noticeable, and although it is more marked in some cases than in others, it is perceptible in the great bulk of them. Sir Charles Oppenheimer's reports from Frankfort, like those of Mr. Jamieson from Shanghai, are of the grander type, taking a wide survey, but there are many others, such, for instance, as those from Havre and Rouen, recently published, which are very useful. It can not be expected that these offices shall always be filled by experts in some particular industry, but if their occupants are capable of collating particulars derived from reliable observers at hand, they can render useful service. We do not want representatives of the ornamental type, who simply 'chronicle small beer,' nor can we expect competent commercial experts in every trade, but between the two there is plenty of scope for capable, shrewd, and willing observers."

ENGLISH COMMENT ON LORD SALISBURY'S REPLY.

With further reference to my dispatch of September 8, I now beg to inclose copy of an article entitled "The defects of our consular service," taken from the Textile Manufacturer, of Manchester, England, of September 15.

CLAUDE MEEKER,

BRADFORD, *September 17, 1896.* *Consul.*

[From the Textile Manufacturer.]

THE DEFECTS OF OUR CONSULAR SERVICE.

In a recent issue of the Textile Manufacturer we referred to the dissatisfaction which has been long felt with regard to the inefficient service rendered by some of our consuls, and which has of late found expression in the recommendations made to the Foreign Office by the chambers of commerce of a number of our large towns, for improving our trade abroad. In his reply, Lord Salisbury states that the reports of Her Majesty's representatives abroad are printed and issued with all possible expedition after their receipt at the Foreign Office, and that "every effort is made to insure the reports being sent home at as early a date as possible after the expiration of the year with which they deal, but much depends upon the date when the necessary statistical data are available in foreign countries, in many of which the systems are by no means so perfect as they are in Great Britain." He further states that the consuls have received very stringent instructions to convert all money, weights, and measures into their English equivalents, and in the rare instances when they fail to do so their attention is at once called to the omission; all important figures are to be given both in currency and sterling. We can not agree that the instances in which the consuls are remiss in regard to converting the weights and measures are rare. In any event, there are far too many instances of lapses of this kind. It may be a tiresome duty to convert moneys and measures into English denominations, but it is a far more simple matter for one in the particular locality to effect

this than to leave the unfortunate home manufacturer to endeavor to form some kind of estimate of the values mentioned. There is little else in reply which calls for comment, and certainly no indication that we may expect any improvement in our consular service at present.

UNITED STATES AND BRITISH CONSULAR SERVICES COMPARED.

I inclose an editorial from the Textile Manufacturer (Manchester, England), an influential textile journal, comparing the consular service of England and the United States. My attention has just been called to this article, which has a bearing on a subject now foremost among English manufacturers and export merchants.

CLAUDE MEEKER,

BRADFORD, *September 23, 1896.* *Consul.*

[From the Textile Manufacturer, May 15, 1896.]

OUR CONSULAR SERVICE.

For some time past the feeling has been steadily growing that our consular service is not by any means as good as it should be, and that it compares very unfavorably with that enjoyed by other countries, notably the United States. It is said that more complete and reliable information is furnished by American consuls than ours ever send home, and what is very much more to the point, the information furnished is of the kind most easily digested by commercial men, and therefore most readily productive of good results. Some explanation of this is apparently found in the fact that for the most part the American consuls are commercial men, and that their term of office is limited to a few years only. We know only too well that in our own case things are very different, and that in many instances the post of British consul is a sinecure to all intents and purposes. Still, we have many notable instances of painstaking care and persistent effort by our representatives abroad, as is evidenced by the voluminous reports which are now and again issued from the Foreign Office. So much of these as pertains to the textile industries generally will be found in our pages under the heading "Gleanings from consular reports," and in these monthly digests our readers will find a vast amount of information no less interesting than valuable. Records such as these show that many of our consuls do their best, and if the results are not as satisfactory as could be wished, it is in their case more a question of misdirected effort than want of energy. Many appear to think that a fanciful and sometimes even romantic account of more or less obsolete native industries is the kind of information which is needed by the manufacturer who is at home "looking for new markets." Another species of consul revels in statistics, and furnishes pages of tabular matter often of no particular value, and probably of less interest. Unfortunately, too, these figures are not always to be relied upon, as we have found on more than one occasion. Some allowance must be made for the difficulties sometimes encountered in collecting such data; but it would appear advisable that information of a doubtful reliability should, if published at all, be accompanied by a notification as to its questionable authenticity. Some improvement might be expected to follow the appointment of less ornamental and more useful personages to our foreign consulates; but it is futile to expect such change being made. It would seem, therefore, that the best course to pursue is for our various chambers of commerce to specially state the kind of information which is calculated to further our commercial interests abroad, and to give the Foreign Office officials no rest until a more satisfactory state of affairs is brought about.

VISIT OF UNITED STATES MANUFACTURERS TO SOUTH AMERICA.

A very pleasant, as well as interesting, episode in the current of life down here has been the visit of the special committee of the National Association of Manufacturers of the United States, under the direction of George W. Fishback, esq., late United States secretary of legation at this capital. Though it was not an official affair, yet, as it bears directly upon our trade relations with the Argentine Republic, I feel it my duty to refer to it.

The object of the visit was to study the commercial, financial, and industrial condition of the country, its prospects and its possibilities, and to consider from the outlook what measures could be adopted to bring the two Republics closer together, commercially and socially. Of course, as an officer of our Government, directly interested in the promotion of our trade relations with the River Plate, their coming here was very gratifying to me; and I did what I could to make their visit satisfactory. In a special train, provided by the Argentine Government, I hastened with many American residents of Buenos Ayres to meet and receive them at the port of Ensenada, 30 miles down the river, upon the arrival of the Royal Mail steamer there. Our minister, Hon. W. I. Buchanan, had gone down to Montevideo the day before to meet them.

Upon the arrival of the distinguished visitors at Buenos Ayres, it is hardly necessary to say that, under the auspices of Mr. Buchanan, they were most cordially welcomed and entertained. The President of the Republic gave them a reception at his own residence, assisted by his cabinet officers and many leading Argentine citizens; while the committees of the bolsa, or chamber of commerce, the Argentine Industrial Union, the Museum of National Products, the Central Produce Market, the "Once de Setiembre" Wool Market, and other centers of trade were most solicitous to afford them all possible opportunities to see, inspect, and understand the trade and business conditions and movements of the country, and day after day accompanied them to all these various points of interest. They also steamed through the city port works—the last one of the docks now rapidly approaching completion, and all of them filled with ocean steamers, and thoroughly provided with all the modern appliances and facilities for handling cargo and loading live stock. Thence, they passed up through the south basin to the "Riachuelo port," with its 3 miles of mole and moorings, along which they saw hundreds of sailing vessels from all parts of the world, loading and unloading from or into warehouses and "barracas"—the whole extended panorama illustrating to the visitors the magnificent proportions which the foreign commerce of the capital of the Argentine Republic has already attained. They were likewise taken by special train for a glimpse of the southern "pampa," spending the day at an Argentine "estancia," where they were enabled personally to inspect all the details of the sheep and cattle

industry, as also to witness the processes of an Argentine butter and cheese factory, which converts daily many tons of milk, from many thousands of cows, into those products. This new industry already reaches out, with annually increasing exports, to the markets of Europe.

After "doing" Buenos Ayres, the North American commission passed up by special train to the growing city of Rosario, where they spent two days visiting the magnificent flouring mills, the tanning establishments, the sugar refinery, the grain elevators and warehouses, and the various industrial establishments which distinguish that Chicago of South America, with the wonderful back country and network of railways, which sustain and give it its great commercial activity. Thence, the commission passed up through the agricultural colonies of the Province of Santa Fé, whose annually increasing grain products are already disputing with those of the United States for the markets of Europe; and after making a visit to the governor of the province at the ancient capital of Santa Fé, they retraced their journey back to Buenos Ayres. I may safely say that what they saw, in the matter of agricultural progress, was not merely a revelation, but a surprise to them.

Indeed, in their conversations with me, the visitors expressed themselves as greatly delighted with the outlook generally of the Argentine Republic; and I am sure that, taking in the situation, they appreciated the necessity, as a means of increasing our mutual trade, not merely of direct steam intercommunication, but also of distinctive American business houses or agencies here, and, ultimately, the establishment of an Argentine-American bank—matters which I have discussed in my reports for the last twenty years. When they took their departure from Buenos Ayres yesterday, by river steamer to Montevideo, a great crowd of persons, Argentines and Americans, went on board to see them off. There was any quantity of cordial hand shaking and heartfelt farewells; and, as the vessel steamed out of the dock, the visitors waved their handkerchiefs in token of the friendship they felt for the far southern land which they were leaving.

During their stay in the Argentine Republic, the Buenos Ayres newspapers vied with each other in extending to the visitors all the usual courtesies, recounting daily their movements through the country, and, upon their departure, offered to them their kindest "despedidas." As a sample, I give the following translation from an article in the Nacion, one of the leading papers of this city. It says of them:

They take away pleasant impressions of our country, having recognized the existence of vitality and progress greater than they had imagined; but while they prophesy for it a brilliant future, they judge that its development is retarded by the instability of our currency.

This observation is undoubtedly correct and coincides with our persistent propaganda in favor of steps being taken to modify, at least, the heavy fluctuations of the gold market, but it seems to us an exaggeration to maintain that, for this reason only, the commercial intercourse between our country and the United States can not be increased.

European manufacturers are at all events of our opinion, and they should not be mistaken, as their experience covers many years, has passed through terrible times of crises, and yet

to-day their transactions with this country are enormously larger than when our currency was at par, and even at a premium.

We are well aware that the conditions of production in the United States are very different to those of Europe, and to attempt to drive the latter out of this market would be useless unless the articles offered were upon equally favorable terms and inspired equal confidence.

To do business with us, sellers must be optimistic and give credit freely; Europe does this, and unless the United States follow its example, the commercial connection which it is proposed to develop will not exceed the diminutive proportions of to-day.

The American commissioners who have recently left us are fully convinced of this, and even though they do not think that the present situation can be modified, the data collected and impressions received during their rapid trip will doubtless induce them to make an effort to open up a trade which at present appears to be doubtful.

However this may be, they have been our welcome guests, and to-day we wish them a pleasant voyage.

You will see from this that the Nacion, speaking for the Argentine people, anticipates important results from their visit here; and, in spite of the present instability of Argentine currency, expresses the opinion that with the adoption of more extended credits on the part of the manufacturers and merchants of the United States—such as Great Britain and the other nations of Europe are in the habit of giving—that there would be at once a marked increase in the trade between the two countries.

At all events, the report of the commission, upon their return home, giving their estimate of this country and of the conditions on which any expansion of our trade with the River Plate must depend will be anticipated here with much interest. If what they saw and learned shall have the effect of giving a new departure to our commerce with the Argentine Republic, their coming here will not have been in vain. Whatever the outcome or result, however, their visit was interesting and most delightful.

E. L. BAKER,

BUENOS AYRES, *August 18, 1896.* *Consul.*

OFFICIAL ACKNOWLEDGMENTS.

In a dispatch to the Department of State dated Buenos Ayres, August 22, 1896, Minister Buchanan says:

I have the honor to inclose herewith copies of letters that have been exchanged between this legation and the Ministry of Foreign Relations in connection with the visit recently made to this country by the committee of the National Association of Manufacturers of the United States.

The committee were given the most courteous treatment on every hand and I feel sure carried away with them pleasant recollections of their stay here.

I personally did everything that lay in my power to aid them in seeing the actual conditions of affairs here both from a commercial and an agricultural standpoint and am satisfied their trip will result in there being placed before our own people a more correct idea of our commercial necessities here than at present exists.

As will be remembered, the advisability of bringing about some such a trip as the one that has been made was the subject of my dispatch of October 30, 1895.

LEGATION OF THE UNITED STATES,
Buenos Ayres, August 17, 1896.

Mr. MINISTER: I have the honor to inclose herewith a communication I have this day received from the committee of the National Association of Manufacturers of the United States, which is to-day leaving this capital, after a most thoroughly pleasant and instructive visit.

May I be permitted to add my own thanks for the kindly acts of Your Excellency's Government that have contributed so much toward making the visit of the committee a most agreeable one.

In making the above request, may I also beg Your Excellency to convey to His Excellency the Minister of Hacienda, Señor Dr. Don Juan José Romero, my gratitude for his courtesy and attention in connection with the committee's visit.

I have heard nothing but the most kindly and pleasant allusions made of Your Excellency's Republic by the committee and feel sure that in many respects their visit will be of benefit to this country and that it will result in good both for this Republic and for the United States. Should the first prove true, I shall be both pleased and satisfied; should both prove true, I shall feel most happy.

I shall take an early opportunity to transmit to the Department of State my sense of the courtesy and attention that has been shown my countrymen by the Argentine people and beg Your Excellency to accept, not only my thanks for all that has thus been done, but the assurance of my high esteem and consideration.

Believe me, etc.,

WILLIAM I. BUCHANAN.

To His Excellency Señor Dr. DON AMANCIO ALCORTA,
Minister of Foreign Affairs, Argentine Republic.

BUENOS AYRES, *August 16, 1896.*

Hon. WILLIAM I. BUCHANAN,
United States Minister, Argentine Republic.

DEAR SIR: The members of the committee of the National Association of Manufacturers desire to tender through you an expression of their profound appreciation of the many courtesies received from the Argentine Government during their stay in this Republic.

May we ask you, therefore, in their name, to do us the honor to convey to His Excellency the Minister of Foreign Affairs, and, through him, to His Excellency the Minister of Hacienda their acknowledgments and sincere thanks for the many courtesies extended to them during their most delightful visit to this country.

The committee carries away a deep appreciation, not only of the present greatness of this country, but a firm conviction that its future is filled with great promise.

We have all been profoundly impressed with what we have seen and we need not assure you that every influence at our command in the United States will, as a result of our visit, be the more gladly directed toward the fullest development of the good relations that exist between the two countries.

Please convey to His Excellency with these words of thanks the assurance of our most distinguished consideration.

We have, etc.,

J. M. STUDEBAKER.
S. E. BACON.
FREDERICK STEARNS.

[Translation.]

MINISTRY OF FOREIGN RELATIONS,
Buenos Ayres, August 19, 1896.

Mr. MINISTER: I have the honor to acknowledge the receipt of Your Excellency's note of the 17th instant, in which you transmit the thanks of the committee of the National Association of Manufacturers of the United States and your own for the attentions shown them during their recent visit to this Republic.

I have passed a copy of said note and of the one inclosed to the Minister of Hacienda, and believe, as does Your Excellency, that the trip of the committee will result beneficially for the commercial relations between our respective countries.

I reiterate to Your Excellency the assurances of my most distinguished consideration.

A. ALCORTA.

To His Excellency Mr. WILLIAM I. BUCHANAN,
Envoy Extraordinary and Minister Plenipotentiary of the United States of America.

LETTER FROM MR. FISHBACK.

In a letter to the Secretary of State, dated October 6, 1896, Mr. George W. Fishback, secretary of the United States legation to the Argentine Republic, says:

SIR: I have the honor to transmit a communication from the members of the committee of American manufacturers, that has just completed a three months' trip to South America, and where, through the good will of the governments of the Argentine Republic, Uruguay, and Brazil and the good offices of the diplomatic and consular representatives of the United States, they were given exceptional opportunities to visit the countries mentioned, to study the commercial conditions as they exist, and to be thrown in contact under the most favorable circumstances with the leading men in the business, political, and social circles of those communities.

* * * * * * *

The members of the committee had the honor to be presented to the Minister of Foreign Affairs of each country and through him to His Excellency the President of the Republic.

They were entertained by the boards of trade and chambers of commerce of each city of importance, and were given the opportunity to meet the heads of the most important commercial houses, both native and foreign, in each community.

As a result of their observations, they are of opinion, as must needs be anyone who studies South American markets, that for the extension of United States trade in Latin America, it is necessary to have the same facilities for trade that are at the disposal of European commerce.

As the workman requires tools, so does foreign commerce need certain facilities. These facilities, in the case in point, are American houses established in South American markets to handle American goods; steamship lines managed in the interest of American trade, and not foreign, as at

present; and American banks, which, in their accommodations to American business, would enable United States houses to conform to the exigencies of the long-credits system that prevails in South America.

[Inclosure.]

LONDON, *September 26, 1896.*

In the name of the Committee of American Manufacturers, which has just completed a three months' visit of commercial investigation in the Argentine Republic, Uruguay, and Brazil, and whose work of examination and research in the markets of these countries has been made in the interest of the foreign commerce of the United States, we desire to convey to you an expression of profound acknowledgment of the many courtesies and kindness received from the United States diplomatic and consular officers in the countries visited, and through you to the Honorable Secretary of the Navy our thanks for the civilities shown us by the commanding officers of the United States war vessels on the South Atlantic station.

The extraordinary courtesies received by us from the governments of the countries visited we attribute largely to the high and enviable position occupied by our official representatives, and in thus making our acknowledgments to the Department of State of their valued services, we are afforded the pleasant opportunity of paying them our personal tribute.

J. M. STUDEBAKER.
WM. HARPER.
FREDERICK STEARNS.
F. L. WAGAR.
W. T. ADAMS.
GEO. WELTON FISHBACK.
T. STEWART WOOD.
T. D. PALMER.

THE DELEGATION IN BRAZIL.

In a dispatch dated September 22, 1896, Hon. Thomas L. Thompson, United States Minister to Brazil, says:

Since the recent visit of their representatives in this country, no doubt remains in my mind that the manufacturers and commercial classes of the United States, with some possible exceptions, are inadequately informed of the manners, social customs, and business methods of Brazil. The former are characteristically French, the latter altogether English.

With inclosed copy of correspondence and newspaper clippings bearing on that subject,* I have the honor to submit my report of the visit of the committee representing the National Association of Manufacturers of the United States to Brazil. The correspondence shows what passed between this legation and the promoters of the enterprise. The press clippings exhibit

*Omitted as not being essential.

the friendly disposition accorded the movement here and in detail the cordial reception and hospitality enjoyed by the visitors wherever they went in Brazil. They were accorded free transportation everywhere, and at several points in the interior entertained at the expense of commercial associations. * * * I inclose also copy of correspondence between the legation and the Brazilian Government and notes of information given to the press. In explanation of the latter, I have to state that through press reports from Buenos Ayres an erroneous impression had been made upon this community as to the character of the committee, which I deemed it important to correct, and I took this method of doing so.

The committee arrived at Rio de Janeiro on the morning of the 26th of August, under the direction of Mr. George W. Fishback. Those who stopped over in Brazil were Frederick Stearns, of Frederick Stearns & Co., manufacturing pharmacists, Detroit, Mich.; Henry F. Gilbert, of E. C. Stearns & Co., Syracuse, N. Y., manufacturers of bicycles; T. Stewart Wood, of Philadelphia, representing textile machinery and cotton and woolen goods, Fairmount Machine Works, and William Wood & Co.; F. L. Wagar, representing the Wagar Lumber Company, Wagar, Ala., and the Gulf Coast Lumber Company, a combination of the large mills on the Gulf; J. M. Studebaker, Studebaker Brothers Manufacturing Co., South Bend, Ind., manufacturers of wagons and carriages; S. E. Bacon, Bacon Manufacturing Co., Erie, Pa., as the representative of the various interests embraced in the Erie Board of Trade; W. T. Adams, Memphis, Tenn., a manufacturer of saw mill and other machinery and accredited representative of the Memphis Manufacturers' Association; T. D. Palmer, Palmer & Smith, leather manufacturers, Newark, N. J., representative of the New Jersey Leather Manufacturers' Association; and William Harper, representing the John S. Stetson Company, Philadelphia, hats.

So anxious were the Brazilians to show respectful attention to our people, the reception committee of the chamber of commerce being advised that the steamer scheduled for the 26th would arrive ahead of time, went to the quay on the afternoon of the 25th and waited there until 6 o'clock, when, as the steamer could not enter the harbor at night, they dispersed, to return for the purpose of boarding her at 6.30 next morning.

In company with Captain Perry, of the U. S. S. *Castine*, and my son, Hugh S. Thompson, I went at that early hour from the *Castine* to the Marine Arsenal, where, by appointment, we were joined by Capt. J. Cordeira da Graca, an intermediary between the federal Department of Industry and the Chamber of Commerce of Rio de Janeiro, Consul-General Townes, and a special committee of the chamber of commerce, which included the president, Mr. Francisco Ramos Paz, the Viscount Duprat, Commendador Hermano Joppert, of the directory of the association, and Messrs. William Newlands, Arthur Hitchings, Dr. José Americo dos Santos, Joaquin Dias Custodio de Oliveira, A. J. Lamoureux, Carlos Hargreaves, F. de P. Chaves Campello, Dr. Frederico Smith de Vasconcellos, and Gabriel M.

Carregal. We then proceeded with the reception committee to the steamer, where, after some delay, * * * we met the visitors informally and returned with them in a special launch to the shore; thence by special cars to the Grand Hotel, where a formal reception took place, followed by a breakfast served in an elaborately decorated salon.

At this very hearty reception, under the auspices of the Chamber of Commerce of Rio de Janeiro, addresses of welcome were made, and numerous toasts and responses included the President of the United States of America and the President of the United States of Brazil.

The visitors, well tired out from the fatigue of their long journey and feeling the necessity for rest, the same day came by special train to Petropolis, and on the following evening attended a reception given in their honor at this legation, where they met the minister for Argentina, the minister for Uruguay, the minister for Chile, Capt. J. Cordeira da Graca, representing the Brazilian Government, Dr. H. Koppke, representing the State of Rio de Janeiro, Consul-General Townes, the reception committee of the Chamber of Commerce of Rio de Janeiro, Capt. Thomas Perry and other officers of the U. S. S. *Castine*, representative manufacturers, principal journalists, and other prominent citizens; the only ladies present, besides the minister's family, being Miss Watts, principal, and Miss Brown, assistant, of a growing American female college in Petropolis, which is prospering under the auspices of the missionary board of the Methodist Church South.

On Friday, August 27, I presented the committee to the governor of Rio de Janeiro, whose official residence is in this capital, and who had kindly provided trains and carriages to enable the visitors to inspect the manufacturing industries and extensive cotton and other factories of Petropolis.

On Saturday, the 29th, I went with them to Rio de Janeiro, where we were most cordially received by the Minister for Foreign Affairs, the President of the Republic, and the Minister of Industry, respectively.

The same day I had the pleasure of presenting Capt. Thomas Perry, the commander of the U. S. S. *Castine*, to the Minister of the Navy. And here it may with propriety be noted that the opportune arrival of the *Castine* and her presence in the Bay of Rio de Janeiro during the sojourn of the committee in this Republic was timely. The efficient services rendered by Captain Perry and the other officers of the *Castine*, in becomingly reciprocating the cordiality conferred by the people of Brazil on our countrymen, was a comfort to the visitors and to this legation.

Arrangements for the practical instruction and entertainment of the visitors were complete in every essential particular, and they were carried out by those having them in charge in a graceful and inspiring manner, until the lamentable death of Mr. Samuel E. Bacon, a member of the committee from Erie, Pa. (especially reported in another dispatch), necessitated a curtailment of the itinerary in progress.

On the part of the Brazilians, each feature of the entertainment was made a commendable success. In the interior, everything possible was done

by the State Governments and people of São Paulo and Minas Geraes for the instruction and social enjoyment of the visitors.

I now have to state, with regret, that, owing possibly to the tax of a protracted journey upon their physical strength and the unhappiness resulting from the loss of one of their best members while here, the committee was unable to take the best advantage of the perfect arrangements made for the accomplishment of their object or to reciprocate before departure the kindly hospitality of which they were made the recipients at the hands of the generous Brazilians.

* * * * * * *

There is no sentiment in trade. Nothing short of a practical demonstration of our ability to compete successfully with European manufacturers and producers, together with the necessary facilities for handling the business on an American basis, will meet the requirement and at the same time overcome the difficulties against which our people are contending in these markets.

While, therefore, in the promotion of commercial relations between the two countries the results to follow this visit may not be as satisfactory as was anticipated, it is the first step in the right direction, which, if supported by energetic action on the part of our manufacturers and merchants in the establishment of trade facilities, placing American goods for sale in this country, and providing for more speedy transportation between the United States and Brazil, trade will follow and in time a rich reward harvested by those who have the nerve to make the venture in opening new markets for American products.

In conclusion, I feel that it is due that gentlemen to make special reference to the interest manifested in our country, its people, and commercial affairs by Capt. J. Cordeira da Graca, who, as a retired naval officer, was attached to the Brazilian commission to the World's Columbian Exposition at Chicago and is now a professor and instructor of mechanical engineering at the Naval School at Rio de Janeiro. Captain Graca was enthusiastically interested in the visit of our countrymen and, as the representative of the federal Department of Industry, untiring in endeavors to instruct and please them while here.

STEAMSHIP SERVICE ON THE PACIFIC COAST.

I have the honor to report that the Pacific Steam Navigation Company is transferring its headquarters from Callao to Valparaiso. This company had here an extensive establishment consisting of general offices, workshops, steam laundry, printing outfit, store ships, yards, etc., which gave employment to a considerable number of people. The reason currently given for this transfer is that the company will enjoy in Chile certain exemptions from import duties, etc., which the Peruvian Government is unwilling to concede to it.

On the other hand, it is claimed that the company will lose valuable franchises in Callao conditioned upon the maintenance of the establishment referred to, which will probably be open to some new company.

This seems to offer an exceptional opportunity to American enterprise to make Callao the southern base of operations for a steamship line between some port or ports of our Pacific seaboard and the west coast of South America. The bay of Callao at all times affords an absolutely safe anchorage. It is practically at the middle of the west coast of the continent, and when the interior is opened by railways, the port of Callao can not fail to keep pace in importance with the increasing commerce that shall seek the world's markets by way of the Pacific.

The growing States on our Pacific seaboard will not tarry long in entering what to them ought to be the easiest of competitions for the trade of the west coast of South America, when they come to consider that they never will have any isthmian canal tolls to pay or costly railroad transshipments to make over the Isthmus of Panama and when they compare distances with the European ports and with the States on our Atlantic seaboard.

That the United States can successfully compete with Europe on this coast, even at equal distances, is being demonstrated by the growing volume of trade that the steamships engaged in the direct traffic with New York via the Straits of Magellan have developed, and to which I have adverted in previous reports. At the close of this quarter, this consulate will report the largest amount of official fees ever recorded on its books, although fees for services to American vessels that were collected in former years are no longer exacted.

It is logical to presume that steamship communication with our Pacific seaboard would largely increase American trade with Peru and the rest of this coast.

The Pacific Steam Navigation Company was founded in 1840 by an American, Capt. William Wheelwright. Failing to enlist American capital in the enterprise, he had to place it in British hands. The first boats provided were the *Chile* and *Peru*, sister paddle-wheel steamships of 700 tons register, of about 150 horsepower. According to its last report, the company had a fleet consisting of four steamships of 7,000 effective tons each, two of 5,000 tons, four of 4,500 tons, two of 4,000 tons, six of 3,000 tons, five of 2,000 tons, three of 1,500 tons, two of 1,250 tons, two of 1,000 tons, one of 500 tons, three of 300 tons, one of 120 tons, and one of 100 tons; total, thirty-six vessels, with an aggregate tonnage of 102,620 tons.

A few years ago, the Compañia Sud Americana de Vapores, under a Chilean charter, entered into competition with the Pacific Steam Navigation Company. For a time, rates went down; then a combination was effected which has resulted profitably to both companies, but also in the fixing of the highest rates of ocean transportation in the world. The Compañia Sud Americana de Vapores has a numerous fleet of splendid vessels and it is reported to be seriously considering the matter of extending its itinerary to Guaymas, Mexico, where connection would be made with the railroad system of the United States.

LEON JASTREMSKI,

CALLAO, *August 31, 1896.* *Consul.*

THE WHEAT CROP OF 1896.

The result of the last wheat harvest, although completed in some countries, can not be ascertained precisely as yet. So far, three estimates concerning the harvest of 1896 have been published, namely:

By—	1895.	1896.
	Bushels.	*Bushels.*
The Hungarian Ministry of Agriculture	2,509,784,000	2,365,336,000
The Parisian Echo Agricole	2,554,322,133	2,383,392,000
The English Grain Trading Journal of Dornbusch	2,579,583,866	2,420,105,866

It must be stated, however, that in all these reports, as well as in the following tables, the figures for Russia are only preliminary and approximate. According to the reports, the world's harvest of wheat for 1896, in comparison with the preceding year, is below the average, and considerably less satisfactory in quality as well as in quantity. The late and exceedingly cold spring had a bad effect on crops, and the drought spoiled the crops in Europe—to a great extent in southern Russia, but in Spain and Portugal especially. As to the transatlantic countries of the southern hemisphere, in which grain ripens in December to February, the conditions for the growth of wheat were also unsatisfactory. The drought during the first period of the growth of cereals and the continual rain during the harvest had a bad effect on the last crop of wheat in the Argentine Republic, Uruguay, and Chile, while the drought also damaged to a great extent the crops of East India and Australia.

This information, of course, refers to the harvest gathered in those countries during the last days of 1895 and the first months of 1896. The greater part of the small surplus in these countries entered the international market long ago and was consumed during the second half of the last campaign; but in view of the fact that the new grain from these countries will not enter the European markets before the second half of the present campaign, and owing to the insufficiency of information concerning the outlook for the future harvest, the report of the present campaign for these countries has been made according to the figures of the last harvest. The table below shows, besides the data of this year's crop, the comparative data of the preceding year, and in order to characterize the harvest better, they are divided into three categories—middling, above middling, and below middling. The figures are given for the past year according to the official statistics for such countries as was possible, viz, the United States, Russia, Germany, Austria-Hungary, Sweden, Belgium, East Indies, Great Britain, and Canada, and, for the present year, according to the preliminary partly official and partly commercial reports. The estimate for Russia for this year's harvest is based

on official and private commercial reports up to August 1, 1896. All the figures for the different countries were reduced to the United States unit and are expressed in bushels.

Countries.	1895.		1896.	
	Category.	Quantity.	Category.	Quantity.
In countries of consumption.		*Bushels.*		*Bushels.*
Germany	Middling	104,905,360	Middling	106,470,213
Sweden	Below middling	3,791,760	do	4,213,067
Norway	Middling	300,933	do	300,933
Denmark	Above middling	4,634,374	Above middling	4,694,560
Holland	Middling	4,574,186	do	5,416,800
Belgium	do	19,861,600	do	20,764,400
Great Britain	Below middling	39,903,760	do	58,381,066
France	Above middling	333,183,620	do	340,656,533
Portugal	Middling	7,222,400	Below middling	6,018,667
Spain	Below middling	100,511,734	do	86,066,933
Italy	do	118,567,734	Above middling	141,438,666
Switzerland	Middling	3,611,200	Below middling	3,009,333
Greece	do	3,611,200	Above middling	4,694,560
Cape Colony	do	4,754,747	Middling	4,514,000
Total		749,434,608		786,639,731
In countries of production.				
United States	Above middling	471,863,466	Below middling	394,222,667
Russia	do	405,658,133	do	349,082,666
Austria-Hungary	Middling	185,495,306	Middling	174,541,333
Roumania	Above middling	69,214,666	Above middling	72,224,000
Bulgaria	do	42,130,666	do	46,042,800
Servia	do	8,426,133	do	9,328,933
Turkey	Middling	42,130,666	do	45,140,000
Asia Minor	do	72,224,000	Middling	75,233,333
Persia	do	18,056,000	do	20,463,467
Algiers	do	24,074,667	Below middling	21,065,333
Tunis	do	7,222,400	Middling	6,620,533
Egypt	do	14,444,800	Below middling	12,037,333
East Indies	do	250,858,026	do	201,625,333
Canada	Above middling	51,158,667	do	37,917,600
Argentine Republic	Middling	63,196,000	do	48,149,333
Uruguay	do	7,222,400	do	6,018,667
Chile	do	14,444,800	do	12,037,333
Australia	Below middling	32,500,800	do	25,880,267
Total		1,780,321,596		1,557,630,931
Grand total		2,529,756,204		2,344,270,662

From the foregoing figures it is seen that, in general, the harvest of 1896 decreased 185,485,542 bushels as compared with the harvest of 1895. The harvest in the United States, Canada, Argentina, Uruguay, Chile, Australia, and East Indies shows a decrease of 165,392,959 bushels. Of the European producing countries, only Russia shows a large decrease—56,575,467 bushels. The countries of consumption harvested 37,205,123 bushels more than last year; only Spain and Portugal among them had a bad crop. France harvested this year nearly as much as last year. An increase compared with last year is to be observed only in Italy and Great Britain.

The decrease of this year's harvest is due also to the decrease in the wheat acreage. Already, last year, in nearly all the large wheat-growing countries, the area under this cereal had greatly decreased. The great decrease took place in the United States, Russia, East India, Austria-Hungary, Argentine Republic, and Germany, the principal cause of which was the extremely low prices during the last three campaigns.

The information concerning the other cereals and grasses is very poor and of such indefinite character that any estimate, even approximate, is impossible. In general, it may be said that the decrease in the rye harvest is still greater than that in wheat. The Hungarian Ministry of Agriculture estimates it at 154,765,714 bushels. Here, the decrease falls mainly upon the exporting countries, especially Russia. Of the other countries, Austria-Hungary has scarcely an average harvest—a little below last year's. The bad harvest of breadstuffs is not compensated this year by a good harvest of fodder grasses, except maize, which promises a good yield. A decrease compared with last year's harvest of oats and barley is very probable in the principal countries of production in Europe and in the United States, and also in the importing countries of Europe; but this decrease is not of such significance as that of wheat and rye.

The export of cereals from Russia during the first eight months of 1896, *i. e.*, from January 1 to September 7, 1896, shows a big decrease in comparison with the preceding year for the same period:

Cereals.	1896.		1895.	
	Poods.	*Bushels.*	*Poods.*	*Bushels.*
Wheat	134,277,000	80,816,850	151,218,000	91,013,074
Rye	51,038,000	32,912,219	57,518,000	37,090,893
Barley	43,218,000	32,514,342	65,212,000	49,061,161
Oats	37,738,000	42,587,330	48,930,000	55,217,505
Maize	5,598,000	3,609,910	13,758,000	8,871,945
Total	271,869,000	192,440,651	336,636,000	241,254,578

JOHN KAREL,
Consul-General.

ST. PETERSBURG, *September 26, 1896.*

CROPS OF AUSTRIA.

I have the honor to present in substance the contents of the quarterly agricultural report of August, 1896, stating the general condition of crops in Austria:

Heavy, continuous rains, which quite often changed to cloud-bursts, accompanied by hail, were characteristic for the period of this report throughout the Empire, excepting Galicia, Bukowina, and some parts of Bohemia and Dalmatia. These rains caused, in many instances, local floods. The

temperature was far below the standard whenever there had been heavy rains, and even snow was reported from Carnolia and Styria.

Up to the ripening period, the weather was favorable in general, but it is impossible at the present date to make correct estimates of rye, wheat, or barley, because the greater part of the crop has not yet been harvested.

The weather was unfavorable in the Alps and the Karst plateau, in Moravia, in Silesia, and the greater part of Bohemia, because the rain period began at the time when the crop was cut and still on the fields. Wheat and barley in many instances were already ripe and had to be left standing on account of the continuous rain or cut while dropping wet. As a consequence, there was a falling off or stoppage of growth of the grains to a degree not known for decades. As a rule, therefore, the crops harvested in good condition are very much in the minority.

To this, the crops of wheat, rye, and barley in Galicia and the greater part of Bukowina stand in favorable contrast. Here, the crop was harvested in the best condition, and some of it has already been thrashed.

Oats, which had not yet finished the ripening period when the rains commenced were rather favored by them than damaged.

Maize is in fine condition, and a good crop is expected. The damp weather favored its growth, but the ears are not well developed.

Millet is in fair condition in the southern country and has ripened in Carnolia.

Buckwheat is reported favorable.

Legumes are in good condition.

Potatoes suffered from the weather; the favorable crop expectations are therefore rather diminished. Peronospora infestans appeared wherever there was much rain.

Sugar beets developed many leaves, and in a few instances they grew yellow, but in general, their condition is satisfactory.

Cabbage suffered from caterpillars.

The hay, left to be harvested, was damaged the most during this period; it was covered with mud, washed away, or became foul. The same may be said of clover and the meadows to be mown in this period. Seed clover is a total failure; on the other hand, the one-year clover is in fine condition and furnished one cutting.

Flax has been already beaten in some instances and gave a good crop.

Grapes have suffered very much during the last months, and the high expectations are considerably spoiled. The damp weather favored the appearance of the peronospora, and still more of the oïdium, and hindered the effectual application of the remedies.

The bad outlook for fruits has grown worse.

MARTIN BEROLZHEIMER,

VIENNA, *September 11, 1896.* *Vice-Consul-General.*

CHANGE OF TARIFF ON THE KAISER WILHELM CANAL.

I have the honor to inclose herewith three copies of the Reichs-Gesetzblatt for the German Empire, of the 8th instant, in which is contained a change of tariff on the Kaiser Wilhelm Canal, to take effect on the 1st of September next.

EDWIN F. UHL,
Ambassador.

BERLIN, *August 15, 1896.*

IMPERIAL DECREE CONCERNING THE APPROVAL OF A REVISED TARIFF OF TOLLS FOR THE KAISER WILHELM CANAL, AUGUST 4, 1896.

In view of the report of July 15, of the current year, I approve, in virtue of the law of May 27, 1896, concerning the tariff of tolls for the Kaiser Wilhelm Canal (imperial laws, p. 150) and of paragraph 3 of the law of March 16, 886, concerning the reconstruction of the North Sea and Baltic Canal (imperial laws, p. 58), and with the consent of the federal council, the accompanying revised tariff of tolls for the Kaiser Wilhelm Canal.

This decree shall be published among the imperial laws.

WILLIAM.

Revised tariff of tolls for the Kaiser Wilhelm Canal.

For passage through the canal, tolls are to be paid by all vessels, excepting those belonging to the imperial navy and the management of the canal, in accordance with the following rates:

	Marks.	
(1) By loaded vessels:		
(*a*) In general commerce—		
For the first 400 register tons net.....per ton...	0.60=	$0.1428
For net tonnage over 400 and up to 600 register tons, inclusive.....per ton...	.40=	.0952
For net tonnage over 600 and up to 800 register tons, inclusive.....per ton...	.30=	.0714
For net tonnage over 800 register tons.....do.....	.20=	.0476
(*b*) In the German coasting trade (law of May 22, 1881, imperial laws, p. 97), in the case of tonnage up to 50 register tons net, for each register ton net.....per ton...	.40=	.0952
(2) By empty vessels or vessels in ballast, in accordance with the charges under 1, diminished by 20 per cent.		
(3) The smallest toll to be received for a single passage under Nos. 1 and 2 is:		
For vessels falling under 1 (*b*).....	6.00=	1.428
For others.....	10.00=	2.38
(4) For towage is charged in addition, in the case of sailing vessels using the ordinary towing apparatus—		
For the first 200 register tons net.....per ton...	.40=	.0952
For register tonnage over that amount.....do.....	.30=	.0714
In the case of sailing vessels of the class described under No. 1 (*b*) and No. 2 under similar conditions—		
For the first 200 register tons net.....per ton...	.25=	.0595
For register tonnage above that amount.....do.....	.20=	.0474

When tugs are supplied for steamers or special towing apparatus for sailing vessels, the canal officials fix the rate according to the size of the tugs supplied and the length of time they are used.

(5) From October to March, inclusive, the rates of toll under Nos. 1 to 3 are raised 10 per cent.

(6) In the computation of the total amount of tolls to be paid, fractional parts of a mark are counted as an entire mark.

(7) Among the foregoing tolls are included the dues for using all the apparatus in aid of the management of the canal and for pilotage between the pilot stations Brunsbüttel, Nübbel, and Friedrichsort. In the case of vessels coming from or proceeding to the North Sea, the Elbe pilotage dues for the distance between the North Sea and Brunsbüttel are to be credited against the canal tolls.

(8) The regulations and rates for the passage of vessels which begin or end their voyage within the canal, for the use of the imperial customs harbors in the canal, as well as for taking up and discharging pilots outside of the pilot stations, shall be established by the canal officials.

This tariff takes effect September 1, 1896, on the same day the tariff of tolls for the North Sea and Baltic Canal of June 4, 1895 (imperial laws, p. 241) expires.

NEW TAXES IN SPAIN.

Consul-General Bowen, under date of October 3, 1896, transmits the following taxation items assessed in conformity with a royal decree dated September 24, 1896.

Shipping companies will pay for passengers the following rates, until further notice:

Class.	To and from—						
	Coast.	Cuba and Puerto Rico.	Philippine Islands.	Algeria and Morocco.	Gibraltar and Portugal.	Rest of Europe.	All other places.
First	$0.17	$2.67	$1.87	$1.82	$1.67	$1.34	$4.13
Second	.08½	1.84	1.34	.....	.....	.84	2.38
Third	.04¼	$0.32 to .99	.34	.17	.17	.34	.83

These taxes are not to be levied on the companies for shipwrecked persons or children under 3 years, nor on coasting vessels running less than 40 miles.

A tax of 5 centavos (a fraction over 8 mills) is imposed on every railway ticket for passengers and for their baggage and for all railway receipts for goods or postal packages, but this tax does not apply to international traffic.

TAX PER TON ON GOODS SENT BY SEA.

Coasting trade.—Iron, $1.67; other articles of trade between the ports of Spain, the Balearic Islands, and Spanish possessions on the coast of North Africa, $2.

Cuba, Puerto Rico, and Philippine Islands.—Sugar and wine, 8½ cents: other articles, 34 cents.

Europe, African coasts on the Mediterranean and the Atlantic as far as Cape Bojador.—Iron (Mediterranean and Guadalquivir trade), 1.7 cents;

common minerals, 3.5 cents; coal, superior minerals, and wine, 17 cents; other merchandise, 22 cents.

Trade with the rest of the world.—Ordinary minerals, 3.5 cents; wine, 17 cents; other merchandise, 50 cents.

The following articles are exempt from this tax: Salt, iron ingots in the coasting trade, returned empty barrels and bags, goods carried in Spanish sailing vessels under 100 tons, coal used in the salt and mineral industries, Spanish iron used in silk factories, and food supplies for ships.

AN OPPORTUNITY FOR UNITED STATES TRADE IN EAST AFRICA.

I inclose a clipping from the Mail, of London, of August 7, 1896, of an article entitled "The decline of British trade with East Africa,"* suggested by a report from Mr. Cave, British consul at Zanzibar, which is of interest, as it shows that in piece goods, at least, the American article is driving its English competitor from the market.

Permit me to quote so much of the article as refers to the superiority of American cloth:

> Of all the imports to Zanzibar, that of piece goods is by far the most important. Last year it was twice as much as that of any other article, and while the imports of piece goods from the other importing countries increased last year, that from Great Britain declined by a fourth. The so-called gray cloth, a kind of unbleached cloth which is in great demand in the interior of Africa and in some parts forms the only currency, is the most important class of piece goods imported, and America has the best part of this trade, not only because it was first in the field with it, but because it is of better quality than Manchester productions of the same piece, is free from sizing, and does not shrink when washed. The American cloth also is stouter and can be relied on for uniform weight, while consignments from other countries vary both in weight and width. In some parts, especially on the Benadir coast, the American cloth, though costing more than the British, practically monopolizes the market.

The British consul makes certain suggestions to English manufacturers which American manufacturers might do well to follow.

LEO BERGHOLZ,

ERZERUM, *August 20, 1896.* *Consul.*

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* Printed in CONSULAR REPORTS No. 192 (September, 1896), p. 224.

NOTES.

American Horses in Europe.—Commercial Agent Thieriot, in a report to the Department of State from Freiburg, Baden, September 18, 1896, says:

Thinking that it might be of interest, I have translated an article published in the Illustrirte Landwirthschaftliche Zeitung (Illustrated Agricultural Journal), under title "About American horses," as follows:

The question as to the origin, nature, state, quality, and condition of American horses has, for some time past, aroused a great deal of curiosity and interest among German farmers, and especially as it is known that the American farmer has given himself unlimited pains and trouble to introduce his horses into Europe and has now forced us to interest ourselves in and scrutinize this new importation with a keener eye.

That the horse was originally brought from Europe to America is just as well known to all as that in certain districts the horse has increased in enormous numbers on that vast continent where there are still to-day hundreds of thousands of half-wild horses. These were mostly of Spanish origin, and were never much regarded. English, Dutch, French, and other emigrants to North America took their native horses with them, which caused any amount of mixed breeding.

In the latter half of the present century, cattle breeding in the United States has made enormous strides toward improvement of breed by importation and crossing of horses and cattle by the most celebrated stocks of foreign lands. It is, therefore, necessary to distinctly classify current breeds and high-class or thoroughbred breeding in the United States. It is reported by all those who studied horse breeding at the Chicago World's Fair and by those who have since published special works on horse culture that America has devoted immense tracts of land to the special purpose of horse breeding and cultivation and has spared no pains or money in inaugurating the best inventions and conditions to further this worthy cause. Yet, in spite of all these endeavors, it must be stated that the same care and preciseness existing in Germany for years is still wanting in America. The American horse, not to speak of the thoroughbreds, is an animal of regular, good health, with extraordinarily hard nerves, good gait, and exceptionally good hoofs and legs, not flattering to the eye, but able to stand a great amount of work, tough, hardened against climatic changes, and with the very humane treatment and kindness it receives, has become renowned for its quick perception and rapidity in learning and being trained.

A special feature with American trainers is their starting in to train a horse in his first year, and it must be this fact that has made the American horses so famous as trotters. It is very peculiar to see how very little care is given to the majority of farm horses and how little attention is paid to the choice and variety of their food. These animals are turned out on the meadows and are allowed to take care of themselves, and, by very early and hard application to work, become worn out sooner than horses of other countries.

The second category is composed of good working horses of heavy caliber, and Americans claim that these horses are exceedingly well adapted for army use and surpass by far the European army horses. It is known that the French War Department, several years ago, imported American stock for army use, but, in spite of their cheapness, did not see its way clear to continue the importation. A great deal of that class of stock goes to England, whereas Germany has, so far, very little use for it. It is quite the contrary as regards heavy

draft horses for farming purposes and for cart horses. A great deal has been done lately in America to improve this class, and it has proved very profitable and efficient with us. The great Berlin breweries have lately utilized these horses to their entire satisfaction.

To perfect the breeding of heavy horses, America has preferred importing Clydesdales, and of late also shires, Suffolks, percherons, Belgian, and Normandy stock. Mixing Oldenburg, East Friesland, and Holstein stock has also given great satisfaction. Horses of great usefulness have thus been produced and get very easily and quickly accustomed to our climate.

For raising the finer grade of stock thoroughbreds, some Arabians and hackneys are employed, and excellent specimens of this breeding have been sent to Europe. It is well known how eagerly American trotters are sought after in Europe.

There is no doubt but that before long the American working horse will be exported to Europe in far greater quantities, and our breeders are, therefore, given the advice to do all in their power to perfect the breeding of these heavy work horses, and thus meet the demands for such improved stock without having to look to America.

American Wool in Bradford.—Consul Meeker writes from Bradford, October 7, 1896:

Great interest has been manifested in Bradford recently by the continuous sale in small lots of American wool. Most of it has been territorial, chiefly Wyoming and Idaho. Of all grades, a little over 1,000,000 pounds have been sold here in the last few weeks at an average of 4½d. (9 cents) per pound. There are still large quantities held for sale. A wool dealer from Boston recently personally disposed of several lots and would have sold much more had not the prices at home stiffened while he was here. At the same time, freight rates advanced nearly 50 per cent; in fact, there is said to be no room on the ships for such freight on account of the movement of wheat, cotton, apples, and produce to this side from the United States. Therefore, for the combined reasons of rise in price and expensive shipping rates, no more American wool is coming over at present. The wool now on hand unsold is being held for a higher price. That which has been sold is of the merino type of short staple and is best suited for hosiery, though some of it will find its way into lower grade worsted coatings and stuff goods. Inquiry concerning the satisfaction this territorial wool had given did not yield very gratifying results. In truth, one buyer was of opinion that the Boston shippers had selected the very worst they had on hand to send over. This opinion was based upon the fact that in one lot there was 75 to 78 per cent waste, so that in top the wool had actually cost the buyer about 44 cents per pound and he was able to sell the top for only 34 cents. He said that the American manufacturers evidently understand how to manipulate this wool without such frightful loss. Wool merchants and men connected with the textile trade in general think that it would be wise for American wool buyers personally and through their trade journals and agricultural papers to carry on a campaign of education that would result in bringing wool to the market in better condition. They state they have gone through this campaign with the English farmers and have finally educated them to a

point that their wool is delivered in fairly good condition and comparatively free from foreign elements which give it weight. Certain it is that the recent experiences in territorial wool have not increased the popularity of that product here.

Cotton Collars, Cuffs, and Shirt Fronts.—Consul-General Judd, of Vienna, reports to the Department September 5, 1896:

I submit some observations about the making of cuffs, collars, and shirt fronts in Austria. It is a curious fact that at home manufacturers of fine white shirts and makers of best-grade collars and cuffs use linen for the outside coverings, while here in Austria, where linen is produced, and consequently cheaper than with us, fully 95 per cent of all collars, cuffs, and shirt fronts are made of what is called here "chiffon," which is nothing else but an all-cotton fabric. In appearance, chiffon looks like a very fine linen, takes a gloss like linen, and no expert can tell the difference, before or after washing; only by a chemical examination of the article can the truth be ascertained. Intending to order shirts some months ago, I asked to have linen shirt fronts. "Oh, you must be an American," was the dealer's reply to my request; "I can always tell an American in that way; they are our only customers who ask for linen bosoms in their shirts." He asked for permission to make me one shirt with a linen front, the other (1 florin cheaper) with a chiffon front, and, after a few months' use, I can not tell which is the linen and which the chiffon or cotton front. As for collars and cuffs, 99 per cent of the dealers in those articles here in Vienna have not even one linen sample in stock. We ought to have facilities to manufacture as fine a chiffon as is made here, in Switzerland, or in England. This material having been produced, our collar, cuff, and shirt manufacturers will no doubt find the same advantage in using chiffon as the manufacturers do here. We import probably $1,000,000 worth of linen, used for the above purpose, and it would not be long ere a good part of that importation would fall away and give us a new article to produce.

Exhibition of Machinery at Munich.—Consul Steiner reports, under date of Munich, August 21, 1896:

I have received a letter from the directing committee of the Second Exhibition of Power and Labor Machines at Munich, 1898. I translate as follows:

The General Trades Union at Munich is, with the cooperation of the Polytechnical Society, arranging for a second exhibition of power and labor machines to be held at Munich in the year 1898. We beg to draw your attention to this undertaking and submit herewith copies of the programme, the invitation, and the regulations for the use of exhibitors.

The exposition, according to section 3 of the programme, is an international one.

In view of the character of the projected enterprise, which will be held under the auspices of His Royal Highness Prince Luitpold, Regent of the Kingdom of Bavaria, we request

you to inform the Government of the country you represent of the undertaking and our request that the exposition be brought to the notice of the manufacturers of the United States in order to secure their interest and participation.

We beg leave to lay special stress on the fact that, according to section 9 of the programme, eminent and noteworthy exhibits will be awarded distinction in the form of a medal and that the award will take place at the expense and under the direction of the royal Bavarian Ministry of the Interior.

We request you to support and further an enterprise that will be beneficial to all.

I beg to state that I have given the committee the addresses of a number of boards of trade and trade unions in the United States and shall call their attention to publications devoted to machinery.

New Docks at Gibraltar.—Under date of August 31, 1896, Consul Sprague, in his annual report, refers as follows to the building of new naval docks in Gibraltar:

The continued increase of the British navy in battle ships and cruisers of formidable dimensions is urging upon the Government the necessity of establishing, without further delay, increased docking facilities for their new specimens for naval warfare, not only at home, but in the colonies. Gibraltar has been one of the coaling stations which has already received the earnest attention of the admiralty, owing to its deficiency in dock and other accommodations for the refitting of war ships, besides securing protection from outward attack for the large stock of coal that has to be kept on hand. The construction of these formidable works has already commenced, with the employment of about 4,000 workmen of all classes, who are daily kept hard at work, under the special charge of superintendents sent out from England by the admiralty authorities, who control everything connected with this important undertaking, which is likely to consume at least five years for its completion and an outlay of several millions of pounds sterling.

Agricultural Statistics of Ireland, 1896.—Vice-Consul Piatt sends the following report from Dublin, September 9, 1896:

The total acreage of Ireland is given at 20,333,344. Of this, the total extent under crops, including meadow and clover, in 1896, was 4,842,944 acres, being a decrease, as compared with 1895, of 37,583 acres. The extent returned under grass was 10,332,894 acres in 1896, as against 10,280,424 acres in 1895, being an increase of 52,470 acres. The extent of fallow in 1896 was 18,280 acres, the extent under woods and plantations was 307,266 acres, and the extent under turf bog, marsh, barren mountain, etc., was 4,831,960 acres in 1896, as against 4,845,034 acres in 1895, or a decrease of 13,074 acres.

Compared with 1895, there was an increase of 1,387 acres in wheat, 1,364 acres in barley, and 2,436 acres in bere and rye; a decrease of 763 acres in beans and pease and 22,797 acres in oats, showing a net decrease of 18,373 acres under cereal crops.

The acreage under mangel-wurzels increased by 1,253 acres; cabbage, by 4,478 acres; vetches and rape, by 495 acres. The extent under potatoes decreased by 4,834 acres; turnips, by 4,787 acres; and carrots, parsnips, and other green crops, by 642 acres, leaving a net decrease of 4,037 acres under green crops.

The acreage under flax in 1896 was 72,301, being a decrease compared with 1895 of 22,902 acres.

The total extent under meadow and clover in 1896 was 2,202,205 acres, as against 2,194,476 acres in 1895, showing an increase of 7,729 acres under meadow and clover.

The returns of live stock show a decrease of 598 horses and mules, as compared with 1895, and an increase of 49,709 in cattle, 167,245 in sheep, and 67,044 in pigs. Of the 17,545,771 poultry enumerated in 1896, 1,090,539 were turkeys, 2,142,186 were geese, 2,973,233 were ducks, and 11,339,813 were ordinary fowls.

Crops, generally speaking, promise an average yield. Wheat seems to be above the average, but short in the stalk. Oats promise a fair yield; the same may be said of barley and rye. Potatoes are above average, and, except in a few districts, have so far escaped the blight. Mangel-wurzels, turnips, and beet roots promise about an average yield, but in many places are not good, owing to the continued dry weather during the earlier part of the season. The dry weather also seriously affected flax, which, on the whole, is below the average, being short in the stalk and light in many places. In connection with flax, I may mention that the number of scutching mills in 1896 was 938, as compared with 956 in 1895, being a decrease of 18 mills.

New Steamships for the Atlantic Transport Company.—Consul Taney, writing from Belfast, September 4, 1896, says:

I have been informed that the president of the Atlantic Transport Steamship Company has recently placed an order with the shipbuilding firm of Harland & Wolff, of this city, for two twin-screw steamships of a freight capacity of 10,000 tons each, and accommodations for 250 saloon passengers. Each ship is to cost, in round numbers $750,000, to be ready for service within a year, and to be in all respects equal to the best type of Atlantic liners. The addition of these two fine steamers to the fleet is expected to greatly improve the service and popularize the route; and it is expected that the time from port to port will be reduced twenty-four hours. This company runs a line of steamers between New York and London and also between Baltimore and London. The stock of the company is owned principally in the United States.

Banana Crop of Bluefields.—Consul O'Hara, of San Juan del Norte, under date of September 15, 1896, transmits the following report from Consular Agent Seat, of Bluefields:

The River Escondido overflows its banks almost every year during the months of June and July, but not for many years has the river risen to a point as high as during the flood which occurred on the 24th and 25th of last July.

The flood was preceded by almost a month of heavy general rains and there had been a slight rise in the river for several days prior to the 24th. On this date, the river began rising at the rate of 1 foot an hour, and continued to rise at that rate until midday of the 25th, when the rising became slower, continuing at the rate of 3 and 4 inches an hour until the morning of the 26th, when the water began to subside, after having reached at Rama a point estimated to be 35 feet above tide level. By the 27th, the river had fallen to its normal level.

The first intelligence of the flooding of the town of Rama and the general extent of the overflow reached Bluefields on the 25th. Rumors of great destruction of property and the loss of several lives were circulated, causing great excitement. Arrangements were made by the intendant for the steamer *Saga* to proceed up the river to the relief of the sufferers. The *Saga* left during the night with a supply of provisions for distribution among the destitute.

On the 26th, the excitement continuing and no definite information having reached Bluefields, Governor Torrez issued a decree placing all boats in the bay under the control of Government officials and authorizing the payment of the expense from the national treasury. Steam tugs were then started up the river, but they returned in a few hours, having met the steamer *Saga* on her way from Rama to the Bluff. The *Saga* brought about one hundred and fifty persons to Bluefields.

Two lives were lost at Rama and a great many people were left without food and clothing. Subscription lists were circulated and several thousand dollars were subscribed for their relief. Three or four houses were lost at Rama and several from the plantations along the river. All fruit sheds, all wharves but one, and the banana plants along the banks where the current swept were washed away.

It is now said that the loss of merchandise, buildings, boats, etc., is less than 200,000 soles and that the damage to the plantations will be offset by increased production next year, as the flood left a deposit of from 6 to 18 inches deep, which will revive the worn-out land of every plantation along the river.

The steamship *Jarl* arrived on the 25th of July and the state of the river not admitting of her quick dispatch cleared in ballast for Bocas del Toro. The steamship *Washington* arrived on the 28th and cleared August 4 with a satisfactory cargo. Every ship arriving since the *Jarl* has secured a good cargo.

According to the invoices on file in this office, 114,000 bunches of bananas were shipped from this port during August, 1895, and 125,000 during August, 1896. It will thus be seen that the flood has had no effect on the banana trade of this port.

The Bluefields Banana Company owns fourteen large plantations along the river. Early in August their manager reported to the company the number of houses, etc., lost, and stated that the places were greatly damaged. Later, he reported that there would probably be a further loss, as a great many banana plants were turning yellow and might die. On the 28th of August he reported as follows:

Outside of the houses we lost, which we think it will take from 3,000 to 3,500 and possibly 4,000 soles to repair, we do not think the loss to the plantations is much. In fact, in the long run, we are satisfied the flood will do more good than harm to the places. The suckers that were washed down in nearly every instance were those along the immediate river front and were pretty much worn out. Fortunately for us, this misfortune happened during the dull season.

The damage, we think, will be repaired before the beginning of the next good season. The flood has left such a deposit on the land that we think by the next season we shall have all the bananas we want and have a better quality of fruit.

Rubber Trade of Bluefields.—Consul O'Hara, under date of September 23, 1896, transmits the following from Consular Agent Seat, of Bluefields, Nicaragua:

There are no invoices on file in this office bearing date earlier than October, 1890, and the invoice book shows entries dating from January 1, 1892, only. Between June 30, 1891, and July 1, 1896, shipments of rubber, as shown by invoices on file in this office, have been made from this port to the United States as follows:

Year.	Quantity.	Value in United States currency.
	Pounds.	
1892	606,955	$258,739.94
1893	408,054	179,629.10
1894	425,777	156,269.59
1895	573,842	259,220.67
1896	525,921	252,698.58

The average price paid was 38, 37, 34, 40, and 40 cents in United States currency per pound for each of the said years, respectively.

I can not obtain Government reports showing the quantity of rubber shipped during years preceding those I mention. The records of this office show a decrease of 14,040 pounds in the exportation of rubber during the months of July and August last as compared with the exportation during the same months last year.

Prior to the cultivation of the banana as an article of commerce, rubber was the chief export, and the quantity exported annually was much greater than it has been during any of the years I mention.

Trade of Cape Gracias-a-Dios.—Consul O'Hara, of San Juan del Norte, writes, September 1, 1896:

The director-general of statistics for Nicaragua has issued a report, under date of July 25, showing that the exports from Cape Gracias-á-Dios for the month of January last were:

Articles.	Value in Nicaraguan currency.	Value in United States currency.
Hides	$244.49	$120.04
Rubber	11,684.65	5,737.16
Skins	71.50	35.10
Tuna	580.50	285.03
Total	12,581.14	6,177.33

According to this report, the imports during the same month amounted to $7,894.24 in Nicaraguan currency, or $3,876.07 in United States currency. Seven hundred and fifty-nine packages were imported. The total weight was 72,025 libras (75,122 pounds). All the shipments were to and from the port of New Orleans. The report for February may not be published for months. As we have no consular agent at Cape Gracias-á-Dios, it is difficult to obtain reliable figures respecting the commerce of the place for any given year.

Recent Ordinances for Bluefields.—Consul O'Hara, September 12, 1896, sends copies of recent ordinances for the town of Bluefields, Nicaragua:

Ordinance No. 9 recites that in view of the expenditures to be incurred for macadamizing the streets, establishing a square, founding a cemetery, and repairing the public highways, the municipality of Bluefields decrees that from and after the 1st of October, 1896, every male inhabitant residing in the district of Bluefields, from the ages of 18 to 55, respectively, shall be obliged to perform three days' labor yearly for the benefit of the city. These days of labor can be commuted in specie at the rate of $1 per diem, that is to say, $3 per annum. Employers of servants, workmen, and other laborers shall pay the above-mentioned dues for account of said employees.

Ordinance No. 10 decrees that from and after the 1st of October, 1896, all lots of land within the limits of the city of Bluefields not fenced in shall be considered municipal property and may be denounced in accordance with the law and adjudicated to the person denouncing same according to a specified tariff. All municipal lots which shall not have been individually denounced may be sold at public sale to the highest and best bidder by

order of the alcalde, subject to eight days' previous public notice, and at the upset price of $5 per lot of 1,250 yards square approximately. All lots of land, adjudicated as mentioned, which shall be found without a structure erected thereon, shall revert to the municipal domain, and may be sold at auction by order of the alcalde. From and after the 1st of March, 1897, owners of lots not adjudicated or sold to them by the municipality, who shall have failed to erect a structure thereon in accordance with this decree, shall pay $5 monthly by way of tax for each lot of 1,250 yards square, said amount to be recovered by the alcalde without any form or process whatever, and all contraveners thereto shall be liable to a fine double the tax which each and every time he shall fail to pay.

Newspapers in Salvador.—Under date of August 21, 1896, Consul O'Hara, of San Juan del Norte, Nicaragua, writes:

Through the kindness of Señor Don Jacinto Cartellanos, Minister of Foreign Relations for the Republic of Salvador, I am enabled to transmit herewith a list of newspapers and other periodicals published in that Republic. United States merchants and manufacturers desirous of advertising in any of the publications mentioned may obtain rates and specimen copies by addressing the publishers. Sufficient money should be inclosed in each case to pay for return postage.

Published in San Salvador.—Diario Oficial, Diario del Salvador, El Siglo XX, La Patria, Boletin de la Diócesis, Revista Judicial, El Municipio Salvadoreño, La Escuela de el Salvador, La Universidad, La Juventud Salvadoreña, El Pensamiento, Boletin Agricola y Comercial, Repertorio Salvadoreña, Revista Médico-Farmacéntica, El Toro del Porvenir, La Nueva Enseñanza, Revista Matematica, El Indice, El Porvenir de Centro America, La Revolucion.

Published in Santa Tecla.—El Universal, Revista del Progreso, Revista Municipal.

Published in Santa Ana.—El Occidental.

Published in Sonsonate.—El Ferrocarril.

The first three papers mentioned are published daily. Most of the others are monthly publications.

Price Lists for Consular Offices.—In a dispatch dated August 27, Consul O'Hara, of San Juan del Norte, says:

Various commercial associations and museums have been organized and established in the United States for the dissemination of information respecting the exports and imports of foreign countries, the cost and selling prices of products and merchandise, freight rates, export and import duties, port

charges and regulations, and the names and pecuniary responsibility of foreign merchants. These associations undertake, through their bureaus of information, to answer business inquiries of every nature and to furnish complete information in regard to the trade and commerce of any foreign country. They also claim to have early and reliable advices concerning projected railways and other important public and private projects that they may publish such information for the benefit of United States dealers in the materials and supplies for which such enterprises may demand the use. The work undertaken by these associations and museums is one that deserves encouragement.

On March 28, 1896, I requested the president of one of these associations to cause to be sent to this office as full a line as possible of price lists of all kinds of American goods and manufactures, that the same might be classified, indexed, and bound, and the bound volume be used as a book of reference.

I have not received any of the lists asked for.

* * * * * * *

I respectfully suggest that it would not be inappropriate for the Department to request the officers of such associations to use their endeavors to secure one set each of such price lists for our consulates and agencies. With a volume of price lists in each office, consular officers might at times furnish to these "bureaus" more "specific information concerning the conditions surrounding trade" than is possible to furnish without the aid of lists showing prices at which United States goods and manufactures may be purchased. I suggest, also, that a list of merchants and manufacturers be forwarded to each consulate, showing the terms upon which each merchant and manufacturer mentioned is willing to sell his wares to responsible parties, and the exact arrangement he has with each export agent in regard to commissions and other charges.

Loss to United States Shipowners in Martinique.—Consul Tucker writes from Martinique, September 18, 1896:

I have the honor to call the attention of the Department to an imposition which is being constantly practiced upon American shipowners by merchants and others at this point, and request that this report be made as public as possible, to the end that the shipowners may be placed upon their guard. The charter party generally reads "for so many American gold dollars, or their equivalent in francs at the rate of 5.25 francs." The consignee takes advantage of this by declaring that it means 5.25 francs in Martinique paper currency, which is a purely local issue, rating at the present time at 5.95 francs. It happened to-day that an American captain had to accept his freight money at the rate stated in the charter party, viz, 5.25 francs, and then convert the same into good money, paying 14 per cent for it. The charter party should always read for so many American gold dollars or their equivalent at current rates of exchange.

Sugar Crop of British Guiana.—Consul Patterson, of Demerara, sends a report dated August 31, 1896, on the condition of the growing sugar cane of British Guiana, in which he says:

In reply to letters of inquiry sent to owners, managers, and agents of a majority of the largest estates, I find they all agree that the weather has been most favorable for the growing crop. One planter writes that the season is "about the most favorable which I have known during my thirty-one years' residence in the colony." All report the cane most promising, and none predict a smaller crop than last year, viz, 100,000 tons. The majority say there will be at least an increase of 10,000 tons, and some as much as 20,000 tons. Grinding will commence about October 10. The area of cane cultivation in the colony has been extended this year, so that, if the fields to be cut between now and the end of the year are to be carried on there will be a larger acreage to cut next year. The acreage to be cut this year is smaller than last year.

Prospects for the Cotton Crop of Egypt.—Vice-Consul-General Washington reports from Cairo, September 8, 1896:

The present season's cotton crop in Egypt promises to surpass all previous years in quality, judging by the reports received up to date from the provinces. According to the statistics compiled by the finance department, the area under cotton this year amounts to 1,050,000 feddans (a feddan is about the equivalent of an acre), as compared with an area of a little under 1,000,000 feddans last year. Last year's crop is calculated at 5,200,000 kantars (1 kantar=100 pounds), so that on the basis of area alone a crop is expected of about 5,500,000 kantars. In addition to the increased area of cultivation, the cotton crop has been favored by the hot, damp weather of the past five weeks, and the result is that, generally, the plants have borne an abundant crop of pods, these, in some districts, being described as extraordinarily numerous.

Up to the present, there has been no appearance of the worm which caused such alarm last year, its ravages leading to the appointment of a commission to study the question of destroying the insect.

Several consignments of this season's crop have already reached Alexandria from Upper Egypt, and picking has begun to a limited extent in Lower Egypt.

Four small consignments from the Delta were yesterday offered for sale in Alexandria, but buyers refused to pay the price asked.

American Trade Journal for Japan.—Consul-General McIvor, of Kanagawa, under date of August 19, 1896, forwards to the Department two copies of a memorial prepared and presented by the editor of the Eastern World,

a weekly news publication of Yokohama, to the chambers of commerce of New York, Chicago, Philadelphia, Baltimore, Tacoma, and San Francisco, soliciting their cooperation and aid in the proposed publication, in Japan, of an American-Japanese trade journal.

Fruit Culture in Germany.—Consul Monaghan, of Chemnitz, writes, under date of October 1, 1896:

Last year Germany paid foreign countries 24,600,000 marks ($5,854,800) for fresh fruit and 13,500,000 marks ($3,213,000) for dried fruit. Her exports in both kinds amounted to 4,700,000 marks ($1,118,600). It is believed by the Empire's best authorities that rational methods in horticulture must result in reducing to almost nothing the imports of fresh and dried fruits. Acting upon this belief, the Prussian supervisors of public lands have put forth efforts to excite intelligent action by the farmers. They also contribute funds for the setting out of orchards and planting of trees, paying the farmers for all original outlays, including trees and the assistance of experts. They pay subsidies to the farmers to keep the trees in good condition till they bear; they also indemnify the farmers with sums equal to the annual rent of the land thus taken for fruit purposes. All this has led to great activity. Few farmers, having the land, are unwilling to profit by so generous a system; the result is a large number of names of those willing to do all the supervisors demand. The influence of the system is sure to be wide reaching.

Consumption of Gas in Germany.—Under date of September 26, Consul Monaghan, of Chemnitz, says:

In 1895, Germany used 733,000,000 cubic meters of gas, to produce which she burned 55,000,000 centners of coal. The number of lights was 5,734,762 (she has, besides, 95,000 16-candlepower electric lights furnished by 180 electric plants). She has 15,644 gas motors, giving 52,000 horsepower. She uses gas for light and fuel, that is, for heating and cooking purposes. It seems to me that much might be done to put American gas stoves on the German market, as all I have seen are much dearer than equally good, if not better, ones in the United States. The Berlin city gas plant produced 103,913,000 cubic meters in 1895, against 74,337,000 cubic meters in 1885, and an English company in Berlin, 32,282,000 cubic meters in 1895, against 30,960,000 cubic meters in 1885.

A New Burner for Petroleum.—Consul Sawter, writing from Glauchau, Germany, September 3, 1896, says:

A new burner for the use of petroleum has been brought to my attention very recently. The news comes from R. Ditmars, of Vienna, a prominent firm, who are awaiting the perfection of their invention before putting it

before the public. The new burner, by the application of an incandescent body, is said to produce the same beautiful effect as incandescent gas and to be much more economical. The exterior burner differs but slightly from the ordinary petroleum burner. It is its interior mechanism which produces the Bunsen light—a mellow, clear, white light of exquisite softness. This effect is obtained from the formation of an extraordinarily intense heat, by which the incandescent body is brought to incandescence, promoting combustion without heating the petroleum balloon or burner, and completely exhausting the petroleum, not leaving the most remote trace of unpleasant odor, as is most frequently the case where petroleum is used as light.

American Petroleum in Italy.—Commercial Agent Huntington, of Castellamare di Stabia, in his annual report upon the trade and industries of his district, has the following relative to American petroleum:

American petroleum is largely imported, but this trade is almost exclusively in the hands of large companies, who work in with the American petroleum monopolists, so that there is little opportunity for private traders. The American companies ought to export petroleum in bulk and maintain depots in the great cities where it could be drawn off into cisterns, carts, or tinned in this country, where labor is cheap. In southern Italy, petroleum is largely peddled from house to house for daily consumption, and whether it be American refined, Russian, or native, it is invariably drawn from American tins, with American packing boxes ostentatiously displayed on the peddlers' carts.

American Pig Iron, Steel, Tools, etc., Wanted in Switzerland.—Consul Germain, of Zurich, reports, September 24, 1896:

Messrs. Baer & Co., one of the largest and most reliable wholesale iron and hardware firms in Switzerland, with houses at Zurich and Basle, called and requested me to put them in communication with American firms able to supply them with several articles in their line. The same firm are already importing iron tubes and pipes from America in large quantities, having received offers from a New York concern, whom, early in 1895, upon their solicitation, I had furnished with the names of the largest dealers in iron and hardware in my district, among whom was the above firm; the same has just again sent in an order for 400 tons.

I asked the gentlemen to address me in writing and I give a copy of their letter for such action as the Department may deem proper:

ZURICH, *September 24, 1896.*

EUGENE GERMAIN, *United States Consul, Zurich.*

We are in the market for the following articles in the iron and steel line, and we ask you to be so kind as to communicate this to the most reliable iron, steel, and tool works of or near the Atlantic coast, so we may be furnished with quotations:

Swiss importations from various sources from January 1 to July 1, 1896:

Forty thousand tons of pig iron for foundry purposes.

Fifty-five thousand tons of soft steel Siemens & Thomas max o, 10 per cent carbon, blooms, billets, wire rods, bars, and sheets of 78¼ by 39⅜ inches, No. 1 to 27, B. W. G. (We are regular takers for 1,000 tons per annum.)

Soft steel sheets, 78¼ by 39⅜ inches, Nos. 20–26, galvanized, tinned, and leaded; 300 to 500 tons per annum.

Thirty-two hundred tons of pipes and tubes, with Withworth thread. (Our sales are 2,000 to 3,000 tons.)

Two thousand tons of hardware goods, chains, bolts, nuts, screws, etc., steel wire and netting.

Machinery and tools for locksmiths and tinsmiths.

All prices to include freight and insurance to Antwerp, Rotterdam, Marseilles, or Genoa.

For immediate delivery, we are buyers free on board steamer at Antwerp for 250 to 400 tons of very soft Siemens, 0.08 car, 39⅜ by 78¼ inches; steel sheets, Nos. 25 to 27 B. W. G. (close annealed).

We will be very thankful for any information you might give us, in order to increase our trade with the United States.

World's Sugar Crop Estimates for 1895-96.—Consul Germain, of Zurich, reports, September 24, 1896:

The Deutsche Zuckerindustrie, a German trade journal devoted to the German sugar interests, estimates the world's sugar production for the campaign of 1895–96 at 7,069,759 tons, against 8,208,361 tons for the previous campaign. In the above figures, the beet-sugar producing countries participated to the amount of 4,236,100 tons in 1895–96, against 4,688,500 in 1894–95, in the following order:

Countries.	1895–96.	1894–95.
	Tons.	*Tons.*
Germany	1,642,400	1,830,500
Austria	779,400	1,043,000
Russia	740,000	595,000
Holland and Belgium	316,000	335,000
Other countries	130,000	140,000

I do not believe that in the above estimates the California and Nebraska beet-sugar production, which is becoming more important every year, is accounted for.

The raw product of the sugar cane, according to Willet & Gray's estimates, foots up 2,833,659 tons, against 3,519,861 tons in 1894–95.

The world's visible supplies, exclusive of the new crop, but including all cargoes afloat, is estimated at the present time to be 1,331,306 tons, against 1,500,413 tons for the corresponding period of last year.

Switzerland's Cattle Imports.—Under date of August 27, 1896, Consul Germain, of Zurich, says:

Cattle men in the United States may be interested in knowing that the imports of foreign beef cattle into Switzerland have for the past seven years

averaged 50,000 head, valued at 26,000,000 francs ($5,018,000) per annum. Of the above, Austria furnished the largest number, and during the years 1889–90 her shipments to Switzerland were valued at 15,000,000 francs ($2,895,000) each year. Italy's share for the same period was valued at only 4,000,000 francs ($772,000), but since then she has increased her shipments to such an extent that her exports for the past few years foot up in the average 20,000,000 francs ($3,860,000) annually. France supplies this country with considerable beef cattle, and in 1892 her exports to Switzerland exceeded Austria's figures by 1,000,000 francs ($193,000), but since then, she has again fallen behind, so that, to-day, Italy and Austria are the main sources of beef supplies, after which comes France and Germany. The United States cut no figure so far in the Swiss cattle imports.

Tick, or Texas Fever, in Australia.—Commercial Agent Keightley, of Newcastle, N. S. W., under date of August 24, 1896, reports that the tick, or Texas fever, has assumed alarming proportions in northern Queensland, is reported to exist in Western Australia, and its further spread is greatly feared by all the Australian colonies. It first appeared in Queensland in 1891, brought by cattle from the northern territory of South Australia. From them and other infected cattle introduced in 1894, the disease spread slowly at first, but latterly in a comparatively rapid manner. The bullock teams and drift stock from the northern territory and the western portion of northern Queensland to the boiling and extract works on the Albert and Norman rivers carried the disease in a southerly and easterly direction to a number of herds in that part of Queensland, inflicting very serious loss; but, as a rule, the losses were not so heavy in the country some distance back as on the coast.

The extreme north and south points infected in Queensland are Thursday Island in the north and Longuach in the south, and the extreme east and west points are Townsville on the east and the Nicholson River, on the South Australian borders, on the west. That is to say, the disease has spread from the Gulf of Carpentaria as far north as Thursday Island, but is found only in certain localities, it being believed that at least one-half of that portion of the colony north of the tropic of Capricorn is still free from infection.

The whole of the gulf country from east to west, following generally the twenty-first parallel, has been strictly quarantined since November, 1895, and although this has to a certain extent stayed the spread of the disease, it has not proved thoroughly effective.

When Queensland was found to be so badly infected, the legislatures of all the other colonies passed acts providing for their safety. The introduction of cattle, horses, sheep, and dogs, also unsalted hides from Queensland, is prohibited absolutely by some colonies and in others is permitted only after thorough inspection.

Rebate on Customs Duties of Natal.—Consul Roberts, of Cape Town, reports, August 26, 1896:

In the last issue of the Natal Government Gazette, published at Maritzburg, the capital of the colony, there is a proclamation allowing rebate on the whole of the customs duties levied on nearly everything required for the mining industry. On chemicals and explosives, however, some duty is to be retained, the proclamation stating that on such goods a rebate shall be allowed to the extent of the difference between the present transit duty and £3 per cent ad valorem on cyanide of potassium and other chemicals for use in the extraction of metals from ores, and the difference between the present transit duty and 1s. 3d. per thousand on detonators and the difference between the present transit duty and one-half of 1d. per pound on dynamite.

Prohibition of Imports of Cattle into Jamaica.—Under date of Kingston, Jamaica, October 9, 1896, Consul Eckford reports that the major-general administering the government, in privy council on the 5th of October, made an order prohibiting, until further orders, the importation of cattle and animals from the United States, Central America, South America, the Leeward Islands, South Africa, and Australia.

American Casks Wanted in England.—Under date of October 1, 1896, Messrs. F. W. Bennett & Co., Bristol, England, write to the Department (on the letter head of George M. Swan & Co., European agents for American cider) that they would like to be put in communication with the large cask merchants or coopers of the United States who would be in a position to supply them with casks of all descriptions.

Additional Taxes in Crete.—Minister Terrell writes to the Department of State from Constantinople, September 30, 1896:

I have the honor to inclose herewith the translation of a note verbale received from the Porte announcing an increased duty of 3 per cent on all goods imported into Crete to indemnify those who suffered in the recent revolution.

[Translation.]

In conformity with the understanding arrived at between the Sublime Porte and the missions of the six great powers, an overtax of customs dues of 3 per cent will be collected on the goods imported into Crete, in order to indemnify those who have suffered losses during recent events.

In having the honor of giving cognizance of this measure to the United States legation, the imperial ministry begs that proper notice be taken of it.

Consular Reports Transmitted to Other Departments.—The following reports from consular officers (originals or copies) were transmitted during the month of October to other Departments for publication or for other action thereon:

Consular officer reporting.	Date.	Subject.	Department to which referred.
John Karel, St. Petersburg	Aug. 5, 1896	Strike in St. Petersburg	Department of Labor.
Do		Wool market in Russia	Department of Agriculture.
T. M. Stephan, Annaberg	Aug. 17, 1896	Agricultural exposition at Kiev.	Do.
L. L. Stang, Saigon	July 25, 1896	Rice	Do.
Do	Aug. 8, 1896	....do	Do.
Do	Aug. 22, 1896	....do	Do.
A. B. Morse, Glasgow	Sept. 25, 1896	Agriculture	Do.
L. S. Hunt, Palmerston	Sept. 15, 1896	Crops	Do.
H. C. Morris, Ghent	Oct. 13, 1896	Belgian savings and pension bureau	Department of Labor.
Stewart Keightley, Newcastle, N. S. W.	Aug. 24, 1896	Texas fever in Australia	Department of Agriculture.
Q. O. Eckford, Kingston, Ja	Oct. 9, 1896	Order prohibiting importation of American cattle.	Do.

FOREIGN REPORTS AND PUBLICATIONS.

Trade of Chungking in 1895.—The North China Herald, of August 14, 1896, says:

After Mr. Colquhoun's statement, which we quoted the other day, that Szechuan is the one great unopened market in China, to secure whose trade British merchants should use every effort, it is refreshing to turn to the reports of Mr. Tratman and Mr. Woodruff on the foreign trade last year of Chungking, the great mart of Szechuan. Considering that the trade of Chungking last year that passed through the foreign customs is valued at £2,208,962, or 13,000,000 haikwan taels, and that it showed an increase over 1894 of nearly 23 per cent, Mr. Colquhoun's statement needs explanation. Mr. Woodruff, too, points out that 1895 was a troubled one in western China. "In Kansu, there is insurrection; in our province, the antiforeign outrages have passed into history, and there has also been local and temporary disturbance from organized bodies of outlaws; in parts of Kueichou and Yunnan, there have been crop failures and quite half Szechuan has suffered from drought."

Notwithstanding these drawbacks, Mr. Tratman is able to say that, "as compared with 1894, foreign imports show an increase of £84,170, native imports an increase of £94,885, and native exports an increase of £233,176—a total increase in the trade of the port of £412,231. This result is extremely encouraging. If it has been attained in the face of the various disabilities under which Chungking at present labors, what may not be expected when the port becomes in the true sense an 'open' one? There are not wanting signs that its period of isolation from the outer world is drawing to a close. Various nations are showing themselves alive to the potentialities of the port, and the chronicles of 1896 will probably have to record an influx of foreign merchants of different nationalities and the appointment of consular representatives to protect their interests."

Mr. Tratman then gives a table of the imports of the principal cotton and woolen manufactures at Chungking in 1895, from which we extract the following:

Shirtings:		
Gray	pieces...	508,681
White	do.....	55,918
English sheetings	do.....	14,510
Cotton:		
Prints	do.....	26,663
Lastings	do.....	33,761
Camels	do.....	2,315
Lastings	do.....	9,881
Long ells	do.....	9,915
Italian cloth	do.....	8,884
Cotton yarn:		
English	piculs...	685
Indian	do.....	114,565
Japanese	do.....	3

In his remarks on imports, Mr. Tratman notices an increase in cotton yarn and goods from the viceroy's mills at Wuchang, but he adds that "no serious rivalry to Indian and English goods is to be feared in this direction under present conditions. The unequal nature of the yarn and the want of toughness in the fabrics places them in a separate category."

He then devotes a long paragraph to the proposal for the establishment of a yarn factory at Chungking. The officials had found that the 200,000 taels which they proposed as its capital was insufficient, and had decided that the merchants should take additional shares to the extent of 400,000 taels. They had bought a site and were ordering the machinery. Meanwhile, the Chinese merchants were not eager for shares. They argue that there is not enough cotton grown in the vicinity, nor is the amount likely to increase while the poppy pays so much better. As the raw material would have to be imported, and the yarn made would probably not be better than that produced at Wuchang, it seemed to be cheaper to import the yarn ready made. "However, notwithstanding the attitude taken up by the merchants, the officials are determined to start the undertaking, and have hopes that when the factory is in working order, the object lesson thus afforded will overcome the scruples of the merchants and induce them to take up the shares." We need not dwell on the other imports mentioned in this report. They included over 32,000 piculs of raw cotton, and Mr. Woodruff, in his report, says that it is probably only a tithe of the total importation.

The opium exported through the foreign customs was valued at nearly 3,000,000 taels, besides which some 5,000 or 6,000 piculs are carried away by junks not plying under charter, and a certain quantity goes overland. There are, besides, large quantities of other produce sent down—nutgalls, for instance, reaching 1,031 tons. Chungking is still waiting for steamers, and is hoping that some one will take advantage of the clause of the Japanese treaty which permits steam navigation to the port. "A practical survey of the harbor and at least a running survey of the river from Ichang are conditions precedent to the advent of steam traffic, and it is in the highest degree desirable that this work should be taken in hand without further loss of time." Meanwhile, trade is still carried on in chartered junks, of which, in 1895, 68 per cent were British, while 71 per cent of the total trade of the port was under the British flag.

In his general notes, Mr. Tratman begins with a very remarkable sentence. He says that no transit passes were taken out, and "it is to be hoped that in the near future foreign representatives of the various firms will replace the present native agents." Why he should entirely ignore the two firms that were represented by foreigners at Chungking demands some explanation. * * * He closes with some remarks on the antiforeign riots in Szechuan in May and June last year and on the climate of Chungking, and both he and Mr. Woodruff draw attention to the "dearness" of copper cash relatively to silver. Both writers give further evidence, if further evidence were needed, of the great advantage it would be to China to have her currency reformed.

Silver Currency in China.—The North China Herald, of Shanghai, July 24, 1896, says:

There are several provinces in China where the silver dollar is only accepted as a curiosity and refused as legal tender. Conspicuous among these are the provinces of Yunnan, Kueichou, Hunan, Shensi, Kansu, and Szechuan. The officials of Szechuan are now trying to introduce the new Government silver dollars and subsidiary coins into general use in that province, and to this end a proclamation has been issued by the Chungking taotai, under instructions of the viceroy, informing the people that the Emperor has authorized the silver dollar and its subsidiary coins as legal tender throughout the Empire, and urging the people of Szechuan "to accept their use, like the people of other provinces. The general acceptance of the subsidiary coins especially would relieve the congested state of the copper-cash market at present so prevalent everywhere, without touching the question of convenience and cleanliness as compared with the copper cash, which alone should be an inducement to abandon the copper for the silver money."

Some $15,000 will soon arrive at Chungking from the Hupeh mints and will be distributed to the various local banks for circulation in the market. As a matter of fact, even

in Soochow, near as that city is to this port, subsidiary coins have only lately been introduced through the energetic policy of His Excellency Chang Chihtung last year. Formerly, native banks and large shops used to issue bamboo slips with their "chops" burnt into them, entitling the bearer to receive 100, 200, or 500 cash, as the case may be, but with the introduction of subsidiary coins made at Kuangtung, these bamboo slips have been prohibited by the authorities. From the official report of the mint authorities of that province, there were coined by them during the year 1895 no less than 331,750 silver dollars, 29,055,900 twenty-cent pieces, and 14,159,660 ten-cent pieces. Of this large amount, more than seven-tenths were coined for other provinces, the balance being circulated locally, there being already a large supply coined in previous years. It would be interesting to know what has been the output of the Hupeh mint so far. With the distant provinces also commencing to use these silver moneys, both the Hupeh and Kuangtung mints will be unable to supply all the calls that will be made on them, hence we hear that the Central Government has recently been urging all the viceroys and governors to establish similar mints in their respective capitals under direction of the board of revenue.

British Trade Returns.—The accounts of trade and navigation of the United Kingdom for the month of September and for the nine months ended September 30, 1895 and 1896, make the following showing of British imports and exports:

Imports.

Articles.	1895.	1896.	Increase.	Decrease.
Month of September.				
Animals, living, for food	$4,441,586	$4,432,880		$8,706
Articles of food and drink:				
Duty free	52,523,245	54,600,223	$2,076,978	
Dutiable	10,217,008	11,104,514	887,506	
Tobacco	1,910,870	2,013,578	102,708	
Metals	7,031,431	7,857,344	825,913	
Chemicals, dyes, and tannics	2,043,750	2,192,120	148,370	
Oils	2,903,261	3,290,805	387,544	
Raw materials:				
For textiles	9,847,803	12,589,110	2,741,307	
For other industries	21,021,603	22,100,520	1,078,917	
Manufactured articles	31,177,446	34,371,442	3,193,996	
Miscellaneous goods	5,552,234	5,624,253	72,019	
Parcel post	336,416	958,652	622,236	
Total	149,006,653	161,135,441	12,128,788	
Nine months ended September 30.				
Animals, living, for food	31,358,114	39,666,214	1,308,100	
Articles of food and drink:				
Duty free	503,124,784	504,757,020	1,632,236	
Dutiable	84,505,449	83,034,598		1,470,851
Tobacco	12,232,984	15,367,677	3,134,693	
Metals	66,878,434	74,606,210	7,727,776	
Chemicals, dyes, and tannics	25,063,224	27,073,615	2,010,391	
Oils	28,132,069	29,430,604	1,298,535	
Raw materials:				
For textiles	247,483,466	240,576,878		6,906,588
For other industries	155,862,262	171,579,071	15,716,809	
Manufactured articles	270,642,233	297,488,070	26,845,837	
Miscellaneous goods	50,186,025	51,701,307	1,515,282	
Parcel post	3,634,108	4,136,900	502,792	
Total	1,479,103,152	1,539,418,164	60,315,012	

Exports.

Articles.	1895.	1896.	Increase.	Decrease.
Month of September.				
Animals, living	$469,447	$533,325	$63,878	
Articles of food and drink	5,669,716	5,545,844		$123,872
Raw materials	7,973,496	7,164,920		808,576
Manufactured and partly manufactured articles:				
Textiles and yarns	41,911,760	41,476,644		435,116
Metals and metal goods	12,065,392	13,530,710	1,465,318	
Machinery and millwork	5,597,866	6,630,426	1,032,560	
Apparel and personal effects	4,230,750	4,682,383	451,633	
Chemicals, chemical products, and medicinal preparations	3,151,794	3,111,046		40,748
All other	13,120,804	12,946,176		174,428
Total manufactures	80,078,366	82,377,385	2,299,019	
Parcel post	520,506	721,016	200,510	
Total British exports	94,711,531	96,342,490	1,630,959	
Foreign and colonial products	19,017,384	16,066,803		2,950,181
Total exports	113,728,915	112,409,293		1,319,632
Nine months ended September 30.				
Animals, living	2,769,958	3,228,942	458,984	
Articles of food and drink	37,957,828	39,220,024	1,262,196	
Raw materials	67,165,422	64,412,925		2,752,497
Manufactured and partly manufactured articles:				
Textiles and yarns	368,145,771	393,616,579	25,470,808	
Metals and metal goods	100,885,741	121,176,808	20,291,067	
Machinery and millwork	53,411,585	60,702,454	7,290,869	
Apparel and personal effects	33,030,999	38,618,800	5,587,801	
Chemicals, chemical products, and medicinal preparations	29,481,143	30,512,673	1,031,530	
All other	113,514,485	120,824,367	7,309,882	
Total manufactures	698,469,724	765,451,681	66,981,957	
Parcel post	4,495,454	5,778,941	1,283,487	
Total British exports	810,858,386	878,092,513	67,234,127	
Foreign and colonial products	219,570,849	203,002,524		16,568,325
Total exports	1,030,429,235	1,081,095,067	50,665,832	

Résumé for the nine months.

Description.	1895.	1896.	Increase.
Imports	$1,479,103,152	$1,539,418,164	$60,315,012
Exports	1,030,429,235	1,081,095,067	50,565,832
Excess of imports	448,673,917	458,323,097	

The Displacement of British Goods in Hongkong and Southern China.—The London Times of August 26, 1896, thus summarizes a recent report on the above subject:

The governor of Hongkong, having appointed a committee, in response to Mr. Chamberlain's circular to all colonial governors, to inquire what, if any, displacement of British goods has taken place in that market, a report has now been issued in which the committee state that it is apparent from the evidence that the displacement of British goods has been going on steadily for some years. But it has not been on a strikingly large scale, nor have many great staples been seriously affected. There are instances, however, in which British manufactures have been entirely ousted by foreign goods, such as llama braids and aniline dyes, while others, such as Spanish stripes and broadcloths, have been in a great measure displaced by similar goods imported from Germany. In other cases, again, there have been attempts to injure British trade in smaller wares by foreign imitations, with, however, only a qualified or temporary success. These articles were represented by hosiery, lamps, paper, umbrellas, rubber shoes, soaps, biscuits, beer, locks, files, needles, cutlery, etc., in which Germany and Japan are the principal competitors with England. But there has been a serious falling off in the imports of metals from Great Britain, notably in that of yellow metal, which formerly was exclusively imported from thence. It is estimated that only about half this import now comes from British makers, the inferior German metal being greatly aided by the lower rate of freight payable from German ports. This applies to the trade also in bar iron, nail rod, and scrap iron, most of which is now imported from Belgium. Belgian manufacturers are helped by cheaper production and lower freights from Antwerp. Pig lead, which was formerly imported from England and Germany, now comes almost exclusively from Australia on account of lower cost of production. The trade in arms, ammunition, and gunpowder is monopolized by continental manufacturers, owing to the much cheaper prices at which they can lay them down in the market. Certain branches of trade, such as those in wire nails and window glass, have always been in Belgian hands, the prices charged being apparently beyond the competition of all other producers. Not so, however, the trade in candles, which has been completely wrested from England by Belgian makers, this being to a great extent due to superior packing. The competition of Japan is only just commencing, but it promises to prove serious later on. Already the Japanese have secured almost a monopoly of the trade in cotton waste, washing soda, and sulphuric acid; they are competing in cotton goods, paper, ships' lamps, and cheap substitutes for crétons, blankets, towels, soaps, etc. Among other items they are exporting well-made cotton half hose 50 per cent below the cost of similar goods from Germany, and their cement, though inferior in quality, is cheaper than any European cement that can be imported, competing even with the local product, which has the advantage of paying no freight or marine insurance. The causes to which the displacement of British goods are to be assigned are stated thus by the committee—(1) lower cost of production of rival foreign goods; (2) disinclination of British manufacturers to study taste of consumers; (3) the steadily falling value of silver since 1873; (4) lower freights outwards from foreign as compared with British ports; (5) cheaper railway transit to foreign ports of shipment.

The committee make special reference to the advantages conferred on American cotton piece goods in the China market by the rates of freight charged by the China conference steamers from New York to Hongkong and Shanghai, which average from 25s. to 30s. per ton, as compared with 57s. 6d. from London and Liverpool outwards. The same remarks apply to the shipment of machinery from the United States to China, the freight for which is about 40 per cent lower than that from British ports. On this important subject, the committee say:

"The question seems to arise how far the Imperial Government would be justified in requiring of the conference a modification of their tariff before continuing a subsidy or other support to any shipping company which is a party to a compact that places British manufac-

turers at a disadvantage with foreign rivals. The committee, moreover, feel bound to record their conviction that several of the witnesses were indisposed to speak freely on this subject of the shipping conference, and they are of opinion that it is a question of such paramount importance to British trade that it might fittingly form the subject of a searching investigation on the part of the home Government."

Apart from this preference to foreign cargo shown by conference steamers, the competition encountered by British goods is, the committee say, for the most part a fair business competition. There are occasional infringements of British trade-marks, and more frequent imitations of British goods by continental makers; but in the majority of cases the imitation is sold as such on its merits, and in some instances the foreign producers strike out new lines for themselves, and from small beginnings evolve a considerable trade. While the British merchant or agent in Hongkong appears to be on the alert, and to very efficiently represent the home manufacturer, the latter seems too often reluctant to alter his styles and methods, does not care to make a present sacrifice for future profit, and is apt to neglect small openings for a new trade. This is in marked contrast to the untiring efforts of foreign makers to study the market and adapt their goods to the requirements of the consumer.

Turning to a consideration of the transit trade of the colony, which the committee take to mean the transshipment of goods in Hongkong for Japan, Siam, Indo-China, the Philippines, Netherlands India, etc., this trade exhibits a tendency to increase on the whole, with the exception of that with Indo-China, which has latterly shown a decline. This decline is due to the high preferential duties recently imposed by the French, the effects of which are visible in the falling off in the export of yarns and British manufactured goods to Saigon and Tongking. When the provisions of the new treaty with Japan come into force a most serious decline is expected to ensue in the export of refined sugar from Hongkong to that country under the revised tariff, and it is feared that this, the chief industry of the colony, may perhaps be permanently injured. As to the transit trade with the interior of China, the committee point out that this trade would be largely benefited and increased were the transit-pass system allowed by the native authorities in South China to work in accordance with the treaty requirements. Unfortunately, ever since the signature of the treaty of Tientsin, Article XXVIII of which confers this transit-pass privilege on British subjects, the officials in South China have steadfastly and persistently sought to render it a dead letter, and so far their success has been most complete. If the transit-pass system be enforced, and the inland waterways of the provinces of Kwang-tung and Kwang-si be opened to foreign trade and steam navigation, as the result of negotiations now proceeding, there is every reason to believe that a marked increase in British trade will soon be apparent.

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VALUES OF FOREIGN COINS.

The following statements show the valuation of foreign coins, as given by the Director of the United States Mint and published by the Secretary of the Treasury, in compliance with the first section of the act of March 3, 1873, viz: "That the value of foreign coins, as expressed in the money of account of the United States, shall be that of the pure metal of such coin of standard value," and that "the value of the standard coins in circulation of the various nations of the world shall be estimated annually by the Director of the Mint, and be proclaimed on the 1st day of January by the Secretary of the Treasury."

In compliance with the foregoing provisions of law, annual statements were issued by the Treasury Department, beginning with that issued on January 1, 1874, and ending with that issued on January 1, 1890. Since that date, in compliance with the act of October 1, 1890, these valuation statements have been issued quarterly, beginning with the statement issued on January 1, 1891.

These estimates "are to be taken (by customs officers) in computing the value of all foreign merchandise made out in any of said currencies, imported into the United States."

The following statements, running from January 1, 1874, to April 1, 1894, have been prepared to assist in computing the proper values in American money of the trade, prices, values, wages, etc., of and in foreign countries, as given in consular and other reports. The series of years are given so that computations may be made for each year in the proper money values of such year. In hurried computations, the reductions of foreign currencies into American currency, no matter for how many years, are too often made on the bases of latest valuations. When it is taken into account that the ruble of Russia, for instance, has fluctuated from 77.17 cents in 1874 to 37.2 cents in April, 1894, such computations are wholly misleading. All computations of values, trade, wages, prices, etc., of and in the "fluctuating-currency countries" should be made in the values of their currencies in each year up to and including 1890, and in the quarterly valuations thereafter.

To meet typographical requirements, the quotations for the years 1876, 1877, 1879, 1881, and 1882 are omitted, these years being selected as showing the least fluctuations when compared with years immediately preceding and following.

To save unnecessary repetition, the estimates of valuations are divided into three classes, viz: (A) countries with fixed currencies, (B) countries with fluctuating currencies, and (C) quarterly valuations of fluctuating currencies.

A.—*Countries with fixed currencies.*

The following official (United States Treasury) valuations of foreign coins do not include "rates of exchange." It follows, therefore, that when foreign money orders are required, the post-office authorities, to save the Department from incurring loss in such transactions, add the rate of exchange to these valuations.

Countries.	Standard.	Monetary unit.	Value in terms of United States gold.	Coins.
Argentine Republic*....	Gold and silver...	Peso.....	$0.96,5	Gold—Argentine ($4.82,4) and ½ Argentine; silver—peso and divisions.
Austria-Hungary†.....	Gold	Crown.....	.20,3	Gold—20 crowns ($4.05,2) and 10 crowns.
Belgium.....	Gold and silver...	Franc.....	.19,3	Gold—10 and 20 franc pieces; silver—5 francs.
Brazil.....	Gold	Milreis	.54,6	Gold—5, 10, and 20 milreis; silver—½, 1, and 2 milreis.
British North America (except Newfoundland)).	..... do.....	Dollar.....	1.00	
Chile‡.....	Gold and silver....	Peso	.91,2	Gold—escudo ($1.82,4), doubloon ($4.56,1), and condor ($9.12,8); silver—peso and divisions.
Cuba.....	.....do.....	.....do.....	.92.6	Gold—doubloon ($5 01,7); silver—peso.
Denmark.....	Gold	Crown.....	.26,8	Gold—10 and 20 crowns.
Egypt.....	.....do.....	Pound (100 piasters).	4.94,3	Gold—10, 20, 50, and 100 piasters; silver—1, 2, 10, and 20 piasters.
Finland.....	.....do.....	Mark.....	.19,3	Gold—10 and 20 marks ($1.93 and $3.85,9).
France.....	Gold and silver....	Franc.....	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Germany.....	Gold	Mark.....	.23,8	Gold—5, 10, and 20 marks.
Great Britain.....	.....do.....	Pound sterling.....	4.86,6½	Gold—sovereign (pound sterling) and half sovereign.
Greece.....	Gold and silver....	Drachma.....	.19,3	Gold—5, 10, 20, 50, and 100 drachmas; silver—5 drachmas.
Haiti.....	.....do.....	Gourde.....	.96,5	Silver—gourde.
Italy.....	.....do.....	Lira.....	19,3	Gold—5, 10, 20, 50, and 100 lire; silver—5 lire.
Liberia.....	Gold	Dollar.....	1.00	
Netherlands§.....	Gold and silver....	Florin.....	.40,2	Gold—10 florins; silver—½, 1, and 2½ florins.
Newfoundland.....	Gold	Dollar.....	1.01,4	Gold—$2 ($2.02,7).
Portugal.....	Gold	Milreis	1.08	Gold—1, 2, 5, and 10 milreis.
Spain.....	Gold and silver....	Peseta.....	.19,3	Gold—25 pesetas; silver—5 pesetas.
Sweden and Norway...	Gold	Crown.....	.26,8	Gold—10 and 20 crowns.
Switzerland.....	Gold and silver....	Franc.....	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Turkey.....	Gold	Piaster.....	.04,4	Gold—25, 50, 100, 200, and 500 piasters.
Venezuela	Gold and silver....	Bolivar.....	.19,3	Gold—5, 10, 20, 50, and 100 bolivars; silver—5 bolivars.

*In 1874 and 1875 the gold standard prevailed in the Argentine Republic. Its currency does not appear in the statements again until 1883, when the double standard prevailed, and the peso attained a fixed value of 96.5 cents.

† On reference to the table of "fluctuating currencies," it will be seen that Austria had the silver standard up to and including the quarter ending July 1, 1892. The next quarter (October 1) inaugurated the gold standard (*see* note under table of "fluctuating currencies").

‡ The gold standard prevailed in Chile until January 1, 1890. The value of the peso has been the same under both standards.

§ The Netherlands florin, as will be seen in the "fluctuating" table, became fixed in value (40.2 cents) in 1880.

B.—*Countries with fluctuating currencies, 1874–'90.*

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1874.	1875	1878.	1880	1883.	1884.
Austria-Hungary*.	Silver	Florin	$0.47,6	$0.45,3	$0.45,3	$0 41,3	$0.40,1	$0 39,2
Bolivia	do	Dollar until 1880; boliviano thereafter.	.96,5	.96,5	.96,5	.83,6	.81,2	.80,6
Central America	do	Peso	.96,5	.91,8	.91,8	.83,6	.....	.....
China	Silver	Haikwan tael	1.61	1.61	.....	.....	.....	.....
Colombia	do	Peso	.96,5	.96,5	.96,5	.83,6	.81,2	.80,6
Ecuador	do	do	.96,5	.91,8	.91,8	.83,6	.81,2	.80,6
Egypt†	Gold	Pound (100 piasters).	.....	.....	4.97,4	4.97,4	4.90	4.90
India	Silver	Rupee	.45,8	.43,6	.43,6	.39,7	.38,6	.38,3
Japan	Gold	Yen	.99,7	.99,7	.99,7	.99,7	.....	.....
	Silver		.....	.....	.....	.....	.87,6	.86,9
Mexico	do	Dollar	1.04,7½	.99,8	.99,8	.90,9	.88,2	.87,5
Netherlands‡	Gold and silver	Florin	.40,5	.38,5	.38,5	.40,2	.....	.....
Peru	Silver	Sol	.92,5	.91,8	.91,8	.83,6	.81,2	.80,6
Russia	do	Ruble	.77,17	.73,4	.73,4	.66,9	.65	.64,5
Tripoli	do	Mahbub of 20 piasters.	.87,09	.82,9	.82,9	.74,8	.73,3	.72,7

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1885.	1886.	1887.	1888.	1889.	1890.
Austria-Hungary*.	Silver	Florin	$0.39,3	$0.37,1	$0.35,9	$0.34,5	$0.33,6	$0.42
Bolivia	do	Dollar until 1880; boliviano thereafter.	.79,5	.75,1	.72,7	.69,9	.68	.85
Central America	do	Peso	.....	.....	.....	.69,9	.68	.85
Colombia	do	do	.79,5	.75,1	.72,7	.69,9	.68	.85
Ecuador	do	do	.79,5	.75,1	.72,7	.69,9	.68	.85
Egypt†	Gold	Pound (100 piasters).	4.90	4.90	4.94,3	4.94,3	4.94,3	4.93.3
India	Silver	Rupee	.37,8	.35,7	.34,6	.33,2	.32,3	.40,4
Japan	Gold	Yen	.....	.....	.99,7	.99,7	.99,7	.99,7
	Silver		.85,8	.81	.78,4	.75,3	.73,4	.91,7
Mexico	do	Dollar	.86,4	.81,6	.79	.75,9	.73,9	.92,3
Peru	Silver	Sol	.79,5	.75,1	.72,7	.69,9	.68	.85
Russia	do	Ruble	.63,6	.60,1	.58,2	.55,9	.54,4	.68
Tripoli	do	Mahbub of 20 piasters.	.71,7	.67,7	.65,6	.63	.61,4	.76,7

* The silver standard prevailed in Austria-Hungary up to 1892. The law of August 2 of that year (*see* CONSULAR REPORTS, No. 147, p. 623) established the gold standard.

† The Egyptian pound became fixed in value at $4.94,3 in 1887.

‡ The Netherlands florin fluctuated up to the year 1880, when it became fixed at 40.2 cents.

C.—*Quarterly valuations of fluctuating currencies.*

Countries.	Monetary unit.	1893.				1894.			
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.	April 1.	July 1.	Oct. 1.
Bolivia	Silver boliviano.	$0.61,3	$0.61	$0.60,4	$0.53,1	$0.51,6	$0.46,5	$0.45,7	$0.46,4
Central America	Silver peso	.61,3	.61	.60,4	.53,1	.51,6	.46,5	.45,7	.46,4
China*	Shanghai tael	.90,6	.90,1	.89,2	.78,4	.76,2	.68,6	.67,6	.68,5
	Haikwan tael	1.01	1.00,4	.99,4	.87,4	.84,9	.76,5	.75,3	.76,3
	Tientsin tael								.72,7
	Chefoo tael								.71,7
Colombia	Silver peso	.61,3	.61	.60,4	.53,1	.51,6	.46,5	.45,7	.46,4
Ecuador	do	.61,3	.61	.60,4	.53,1	.51,6	.46,5	.45,7	.46,4
India	Silver rupee	.29,2	.29	.28,7	.25,2	.24,5	.22,1	.21,7	.22
Japan†	Silver yen	.66,1	.65,8	.65,1	.57,3	.55,6	.50,1	.49,3	.50
Mexico	Silver dollar	.66,6	.66,2	.65,6	.57,7	.56	.50,5	.49,7	.50,4
Peru	Silver sol	.61,3	.61	.60,4	.53,1				
Russia‡	Silver ruble	.49,1	.48,8	.48,3	.42,5	.51,6	.46,5	.45,7	.46,4
Tripoli	Silver mahbub	.55,3	.55	.54,5	.47,9	.41,3	.37,2	.36,6	.37,1
Venezuela§	Silver bolivar					.46,5	.41,9	.41,3	.41,8

Countries.	Monetary unit.	1895.				1896.			
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1,	April 1.	July 1.	Oct. 1.
Bolivia	Silver boliviano	$0.45,5	$0.44,1	$0.48,6	.48,6	$0.49,1	$0.49,3	$0.49,7	$0.49
Central America	Silver peso	.45,5	.44,1	.48,6	.48,6	.49,1	.49,3	.49,7	.49
China*	Amoy tael								.79,3
	Canton tael								.79
	Chefoo tael	.70,4	.68,3	.75,1	.75,2	.75,9	.76,3	.76,9	.75,8
	Chinkiang tael								.77,4
	Fuchau tael								.73,3
	Haikwan tael	.74,9	.75,6	.80	.80,0	.80,8	.81,2	.81,9	.80,6
	Hankow tael								.74,2
	Ningpo tael								.76,2
	Niuchwang tael								.74,3
	Shanghai tael	.67,3	.65,2	.71,8	.71,8	.72,5	.72,9	.73,5	.72,4
	Swatow tael								.73,2
	Takao tael								.79,8
	Tientsin tael	.71,4	.69,2	.76,1	.76,2	.76,9	.77,3	.78	.76,8
Colombia	Silver peso	.45,5	.44,1	.48,6	.48,6	.49,1	.49,3	.49,7	.49
Ecuador	do	.45,5	.44,1	.48,6	.48,6	.49,1	.49,3	.49,7	.49
India	Silver rupee	.21,6	.21,0	.23,1	.23,1	.23,3	.23,4	.23,6	.23,3
Japan†	Silver yen	.49,1	.47,6	.52,4	.52,4	.52,9	.53,2	.53,2	.52,8
Mexico	Silver dollar	.49,5	.47,9	.52,8	.52,8	.53,3	.53,6	.54	.53,2
Persia	Silver kran			.08,9	.09,0	.09	.09,1	.09,2	.09
Peru	Silver sol	.45,5	.44,1	.48,6	.48,6	.49,1	.49,3	.49,7	.49
Russia‡	Silver ruble	.36,4	.35,3	.38,9	.38,9	.39,3	39,5	.39,8	.39,2
Tripoli	Silver mahbub	.41,1	3.9,8	.43,8	.43,8	.44,3	.44,5	.44,9	.44,2

*China (silver). The Haikwan tael is the customs tael, and the Shanghai tael that used in trade. Consul-General Denny (CONSULAR REPORTS No. 43, p. 516) says: "The value of the tael varies in the different ports of China, and every port has two taels, one being the Government, or Haikwan, tael, in which all duties have to be paid, and the other the market tael."

†Gold is the nominal standard in Japan, but silver is practically the standard. The fixed value of the gold yen is 99.7 cents.

‡The gold ruble is valued at 77.2 cents. Silver is the nominal standard, but paper is the actual currency, and its depreciation is measured by the gold standard.

§The Venezuelan bolivar became fixed in value (19.3 cents) on January 1, 1893.

FOREIGN WEIGHTS AND MEASURES.

The following table embraces only such weights and measures as are given from time to time in CONSULAR REPORTS and in Commercial Relations:

Foreign weights and measures, with American equivalents.

Denominations.	Where used.	American equivalent.
Almude	Portugal	4.422 gallons.
Ardeb	Egypt	7.6907 bushels.
Are	Metric	0.02471 acre.
Arobe	Paraguay	25 pounds.
Arratel or libra	Portugal	1.011 pounds.
Arroba (dry)	Argentine Republic	25.3175 pounds.
Do	Brazil	32.38 pounds.
Do	Cuba	25.3664 pounds.
Do	Portugal	32.38 pounds.
Do	Spain	25.36 pounds.
Do	Venezuela	25.4024 pounds.
Arroba (liquid)	Cuba, Spain, and Venezuela	4.263 gallons.
Arshine	Russia	28 inches.
Arshine (square)	do	5.44 square feet.
Artel	Morocco	1.12 pounds.
Baril	Argentine Republic and Mexico	20.0787 gallons.
Barrel	Malta (customs)	11.4 gallons.
Do	Spain (raisins)	100 pounds.
Berkovet	Russia	361.12 pounds
Bongkal	India	832 grains.
Bonw	Sumatra	7,096.5 square meters.
Bu	Japan	0.1 inch.
Butt (wine)	Spain	140 gallons.
Caffiso	Malta	5.4 gallons.
Candy	India (Bombay)	529 pounds.
Do	India (Madras)	500 pounds.
Cantar	Morocco	113 pounds.
Do	Syria (Damascus)	575 pounds.
Do	Turkey	124.7036 pounds.
Cantaro (Cantar)	Malta	175 pounds.
Carga	Mexico and Salvador	300 pounds.
Catty	China	1.333⅓ (1⅓) pounds.
Do	Japan	1.31 pounds.
Do	Java, Siam, Malacca	1.35 pounds.
Do	Sumatra	2.12 pounds.
Centaro	Central America	4.2631 gallons.
Centner	Bremen and Brunswick	117.5 pounds.
Do	Darmstadt	110.24 pounds.
Do	Denmark and Norway	110.11 pounds.
Do	Nuremberg	112.43 pounds.
Do	Prussia	113.44 pounds.
Do	Sweden	93.7 pounds.
Do	Vienna	123.5 pounds.
Do	Zollverein	110.24 pounds.
Do	Double or metric	220.46 pounds.
Chih	China	14 inches.
Coyan	Sarawak	3,098 pounds.
Do	Siam (Koyan)	2,667 pounds.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalent.
Cuadra	Argentine Republic	4.2 acres.
Do	Paraguay	78.9 yards.
Do	Paraguay (square)	8.077 square feet.
Do	Uruguay	Nearly 2 acres.
Cubic meter	Metric	35.3 cubic feet.
Cwt. (hundredweight)	British	112 pounds.
Dessiatine	Russia	2.6997 acres.
Do	Spain	1.599 bushels.
Drachme	Greece	Half ounce.
Dun	Japan	1 inch.
Egyptian weights and measures	(*See* CONSULAR REPORTS No. 144.)	
Fanega (dry)	Central America	1.5745 bushels.
Do	Chile	2.575 bushels.
Do	Cuba	1.599 bushels.
Do	Mexico	1.54728 bushels.
Do	Morocco	Strike fanega, 70 lbs.; full fanega, 118 lbs.
Do	Uruguay (double)	7.776 bushels.
Do	Uruguay (single)	3.888 bushels.
Do	Venezuela	1.599 bushels.
Fanega (liquid)	Spain	16 gallons.
Feddan	Egypt	1.03 acres.
Frail (raisins)	Spain	50 pounds.
Frasco	Argentine Republic	2.5096 quarts.
Do	Mexico	2.5 quarts.
Fuder	Luxemburg	264.17 gallons.
Garnice	Russian Poland	0.88 gallon.
Gram	Metric	15.432 grains.
Hectare	do	2.471 acres.
Hectoliter:		
Dry	do	2.838 bushels.
Liquid	do	26.417 gallons.
Joch	Austria-Hungary	1.422 acres.
Ken	Japan	4 yards.
Kilogram (kilo)	Metric	2.2046 pounds.
Kilometer	do	0.621376 mile.
Klafter	Russia	216 cubic feet.
Kota	Japan	5.13 bushels.
Korree	Russia	3.5 bushels.
Last	Belgium and Holland	85 134 bushels.
Do	England (dry malt)	82.52 bushels.
Do	Germany	2 metric tons (4,480 pounds).
Do	Prussia	112.29 bushels.
Do	Russian Poland	11⅓ bushels.
Do	Spain (salt)	4,760 pounds.
League (land)	Paraguay	4,633 acres.
Li	China	2,115 feet.
Libra (pound)	Castilian	7,100 grains (troy).
Do	Argentine Republic	1.0127 pounds.
Do	Central America	1.043 pounds.
Do	Chile	1.014 pounds.
Do	Cuba	1.0161 pounds.
Do	Mexico	1.01465 pounds.
Do	Peru	1.0143 pounds.
Do	Portugal	1.011 pounds.
Do	Uruguay	1.0143 pounds.
Do	Venezuela	1.0161 pounds.
Liter	Metric	1.0567 quarts.
Livre (pound)	Greece	1.1 pounds.
Do	Guiana	1.0791 pounds.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalent.
Load	England (timber)	Square, 50 cubic feet; unhewn, 40 cubic feet; inch planks, 600 superficial feet.
Manzana	Costa Rica	1⅔ acres.
Marc	Bolivia	0.507 pound.
Maund	India	82⅔ pounds.
Meter	Metric	39.37 inches.
Mil	Denmark	4.68 miles
Do	Denmark (geographical)	4.61 miles.
Morgen	Prussia	0.63 acre.
Oke	Egypt	2.7225 pounds.
Do	Greece	2.84 pounds.
Do	Hungary	3.0817 pounds.
Do	Turkey	2.85418 pounds.
Do	Hungary and Wallachia	2.5 pints.
Pic	Egypt	21¼ inches.
Picul	Borneo and Celebes	135.64 pounds.
Do	China, Japan, and Sumatra	133⅓ pounds.
Do	Java	135.1 pounds.
Do	Philippine Islands (hemp)	139.45 pounds.
Do	Philippine Islands (sugar)	140 pounds.
Pie	Argentine Republic	0.9478 foot.
Do	Castilian	0.91407 foot.
Pik	Turkey	27.9 inches.
Pood	Russia	36.112 pounds.
Pund (pound)	Denmark and Sweden	1.102 pounds.
Quarter	Great Britain	8.252 bushels.
Do	London (coal)	36 bushels.
Quintal	Argentine Republic	101.42 pounds.
Do	Brazil	130.06 pounds.
Do	Castile, Chile, Mexico, and Peru	101.61 pounds.
Do	Greece	123.2 pounds.
Do	Newfoundland (fish)	112 pounds.
Do	Paraguay	100 pounds.
Do	Syria	125 pounds.
Do	Metric	220.46 pounds.
Rottle	Palestine	6 pounds.
Do	Syria	5¾ pounds.
Sagen	Russia	7 feet.
Salm	Malta	490 pounds.
Se	Japan	3.6 feet.
Seer	India	1 pound 13 ounces.
Shaku	Japan	10 inches.
Sho	do	1.6 quarts.
Standard (St. Petersburg)	Lumber measure	165 cubic feet.
Stone	British	14 pounds.
Suerte	Uruguay	2,700 cuadras (*see* cuadra).
Tael	Cochin China	590.75 grains (troy).
Tan	Japan	0.25 acre.
To	do	2 pecks.
Ton	Space measure	40 cubic feet.
Tonde (cereals)	Denmark	3.94783 bushels.
Tondeland	do	1.36 acres.
Tsubo	Japan	6 feet square.
Tsun	China	1.41 inches.
Tunna	Sweden	4 5 bushels.
Tunnland	do	1.22 acres.
Vara	Argentine Republic	34.1208 inches.
Do	Castile	0.914117 yard.
Do	Central America	38.874 inches.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalent.
Vara	Chile and Peru	33.367 inches.
Do	Cuba	33.384 inches.
Do	Curaçao	33.375 inches.
Do	Mexico	33 inches.
Do	Paraguay	34 inches.
Do	Venezuela	33.384 inches.
Vedro	Russia	2.707 gallons.
Vergees	Isle of Jersey	71.1 square rods.
Verst	Russia	0.663 mile.
Vlocka	Russian Poland	41.98 acres.

METRIC WEIGHTS AND MEASURES.

Metric weights.

Milligram ($\frac{1}{1000}$ gram) equals 0.0154 grain.
Centigram($\frac{1}{100}$ gram) equals 0.1543 grain.
Decigram ($\frac{1}{10}$ gram) equals 1.5432 grains.
Gram equals 15.432 grains.
Decagram (10 grams) equals 0.3527 ounce.
Hectogram (100 grams) equals 3.5274 ounces.
Kilogram.(1,000 grams) equals 2.2046 pounds.
Myriagram (10,000 grams) equals 22.046 pounds.
Quintal (100,000 grams) equals 220.46 pounds.
Millier or tonnea—ton (1,000,000 grams) equals 2,204.6 pounds.

Metric dry measure.

Milliliter ($\frac{1}{1000}$ liter) equals 0.061 cubic inch.
Centiliter ($\frac{1}{100}$ liter) equals 0.6102 cubic inch.
Deciliter ($\frac{1}{10}$ liter) equals 6.1022 cubic inches.
Liter equals 0.908 quart.
Decaliter (10 liters) equals 9.08 quarts.
Hectoliter (100 liters) equals 2.838 bushels.
Kiloliter (1,000 liters) equals 1.308 cubic yards.

Metric liquid measure.

Milliliter ($\frac{1}{1000}$ liter) equals 0.0388 fluid ounce.
Centiliter ($\frac{1}{100}$ liter) equals 0.338 fluid ounce.
Deciliter ($\frac{1}{10}$ liter) equals 0.845 gill.
Liter equals 1.0567 quarts.
Decaliter (10 liters) equals 2.6418 gallons.
Hectoliter (100 liters) equals 26.418 gallons.
Kiloliter (100 liters) equals 264.18 gallons.

Metric measures of length.

Millimeter ($\frac{1}{1000}$ meter) equals 0.0394 inch.
Centimeter ($\frac{1}{100}$ meter) equals 0.3937 inch.
Decimeter ($\frac{1}{10}$ meter) equals 3.937 inches.
Meter equals 39.37 inches.
Decameter (10 meters) equals 393.7 inches.
Hectometer (100 meters) equals 328 feet 1 inch.
Kilometer (1,000 meters) equals 0.62137 mile (3,280 feet 10 inches).
Myriameter (10,000 meters) equals 6.2137 miles.

Metric surface measures.

Centare (1 square meter) equals 1,550 square inches.
Are (100 square meters) equals 119.6 square yards.
Hectare (10,000 square meters) equals 2.471 acres.

CONSULAR REPORTS.

COMMERCE, MANUFACTURES, ETC.

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PRODUCTION OF STARCH SUGAR FROM RICE.

The following reports were obtained by the Department of State from consular officers in response to an application from Peoria, Ill., as to the conditions governing the manufacture of starch sugar from rice in various countries, and the local facilities for the establishment of a starch sugar factory. Consular officers in rice-producing countries were directed also to report upon the cultivation of the grain, the area under cultivation, the methods of harvesting, direction and quantity of exports of rice, etc. The reports from countries of consumption are given first, and those from countries of production follow.

AUSTRIA.

TRIESTE.

The rice imported into this district is consumed as food, a portion of the broken rice being manufactured into starch. There is one large rice-hulling mill, the Prima Pilatura Triestina di Riso, located in Trieste, and 30,600 tons of unmanufactured (or rough) rice imported in 1895 were imported by this mill. The mill commenced operation in the early part of 1895, and is reported to do a good, paying business.

There is no export tax on glucose or on grape sugar, as there are no export taxes of any kind. The rate of taxation on factories is about 12 per cent on the net profits, but all new manufacturing properties are exempt from income tax for a period of fifteen years. This, however, is at the discretion of the Government, to whom petition is made for the exemption, and the grant is allowed or not, as seems to them best.

The following statement shows the prices of manufactured (clean) rice delivered here, the countries from which it came, and the prices during the last ten years:

Price of manufactured rice delivered in Trieste.

Description.	Price.	Description.	Price.
From Italy.		*From India*—Continued.	
Marked Japan.....per 200 pounds...	$6.00 to $7.30	Moulmein.....per 200 pounds..	$4.00 to $4.80
Marked China.....do.....	6.90 to 8.00	Broken.....do.....	3.20 to 3 30
From India.		*From Japan.*	
Rangoon.....do.....	3.10 to 4.20	Japan.....do....	4.60 to 6.00
Arracan.....do.....	3.30 to 4.00	Broken.....do.....	3.40 to 3.60
Bassein.....do.....	3.60 to 4.80		

Medium prices of manufactured rice during the last ten years.

Description.	Price.	Description.	Price.
From Italy.		*From India*—Continued.	
Marked Japan.....per 200 pounds...	$6.40 to $7.60	Moulmein.....per 200 pounds...	$4.80 to $5.60
Marked China.....do.....	7.60 to 8.80	Broken.....do.....	2.80 to 3 00
From India.		*From Japan.*	
Rangoon.....do.....	4.00 to 5.00	Japan.....do.....	5.00 to 6.40
Arracan.....do.....	4.40 to 4.80	Broken.....do.....	3.80
Bassein.....do.....	4.40 to 5.20		

Quantity of rice imported during the year 1895.

Description.	Quantity.	Description.	Quantity
Unmanufactured.	*Tons.*	*Manufactured*—Continued.	*Tons*
From India.....	24,600	From Japan.....	1,000
From Japan.....	6,000	*Broken.*	
Manufactured.		From India.....	3,900
From Italy.....	5,000	From Japan.....	1,000
From India.....	1,500		

The tendency of the future price of rice here would seem to be steady and unchanged.

J. EDWARD NETTLES,
Consul.

TRIESTE, *April 3, 1896.*

FRANCE.

HAVRE.

The wholesale price of rice at this port varies, of course, from time to time, with the market value of the product in other markets, but the following may be taken as the average value for some years past: Rice in paddy (en paille), $34.74 per ton (1,000 kilograms); broken (brisures), $28.95.

This market is supplied with rice principally from the French colony of Cochin China, and the market value here is necessarily influenced to some

extent by the annual production in that colony. It is quite impossible to estimate with any degree of accuracy what the variation in price may be from year to year.

Rice coming to this market from French colonies (direct transportation), accompanied by a certificate of origin, is free of duty; but when imported from other provinces or countries (direct transportation) the duty is as follows: Husked rice (riz décortique), $15.44 per ton (1,000 kilograms); broken (riz brisures), $11.58; in paddy (riz en paille), $5.79. To these figures is to be added a special duty (droit de statistique) of 2 cents per ton.

There is no export duty on either grape sugar or glucose, but a charge of 2 cents is exacted on each package exported.

When debarkation of merchandise is made within the iron stockade provided at certain docks, the merchandise is taxed 1 cent per ton (1,000 kilograms). If the debarkations are made at the storehouses of the chamber of commerce, located at certain other docks, the consignee must pay 5 cents per ton when thus debarked. If the goods are unloaded on the ordinary unprotected docks, where the freight is determined by the face of the bill of lading, the consignee must pay all costs of delivery on the docks, viz, 10 centimes per 100 kilograms. If, on the contrary, it is necessary to weigh the merchandise in order to verify the amount of freight, the consignee pays only one-fourth of the above costs, plus 5 centimes per 1,000 kilograms for port dues (signaux).

Transportation from the docks to the plant, if the plant is located within the limits of the city, is at the rate of 29 cents per ton (1.50 francs per 1,000 kilograms); if outside of the city limits, at reasonable rates per contract.

The manufacture of glucose in France is placed under the surveillance of excise officials, and an annual license of $24.13 (125 francs) is exacted. An office for the special use of such officials must be provided in the factory. The excise, or régie, tax on glucose consumed in France is $1.15 per 100 pounds (12 francs per 100 kilograms).

The annual tax on factory buildings, plants, etc., is 15 per cent of the rental value of the same. An additional tax of 15 francs per annum is imposed on the manufacture of glucose, plus 3 francs on each employee of the factory up to 200 francs. In other words, the annual per capita tax on the personnel can not exceed 200 francs. The window tax averages about 1.50 francs per window for the first and second floors; porte-cochère, 18.80 francs each; outside doors, first or second floors, 1.80 francs.

M. Latham, president of the Havre Chamber of Commerce, to whom I am indebted for many courtesies, has assured me that it would be easy to find a suitable and convenient location for a starch-sugar factory at a reasonable price in or near Havre, especially on the Tancarville Canal, near the Basin Fluvial. Here cargoes can be embarked and disembarked without cost of transportation.

C. W. CHANCELLOR,

HAVRE, *March 10, 1896.* *Consul.*

MARSEILLES.

The importations of rice into Marseilles amount annually to about 150,000,000 pounds, the greater part of which comes at present from the French Chinese possessions. Of the total amount, Italy furnishes 3,300,000 pounds; Japan, 44,000,000 pounds; India, 9,900,000 pounds; and French China, 93,500,000 pounds. The importations of Italian rice are gradually diminishing and are being replaced by similar grades from India. The former commands from $6.75 to $7.72 per 220 pounds for the glazed product and from $4.82 to $5.79 per 220 pounds for the unglazed. Indian rice is cheaper, the price being $4.05 for the same quantity glazed and $3.08 unglazed. The Japan product commands from $4.05 to $5.40 per 220 pounds. These prices are for rice delivered at the custom-house, to which must be added the duty of 8 francs ($1.54) per 220 pounds.

The products of French-Chinese territory are admitted free of duty, and it is by reason of this that the importations from that country have so enormously increased in recent years. The glazed rice from these possessions commands $3.50 per 220 pounds; unglazed, $2.50; broken, from $1.93 to $2.89.

There are no actual importations of what is known as paddy. The rice is purchased in large cargoes and is cleaned and assorted after reaching this market. There is in every cargo a certain quantity of paddy, the proportion varying from 10 to 15 per cent of the entire cargo. This classification divides the product into five grades, or qualities, much the larger part of which is, of course, used for table purposes. Of the lower grades, some is sold to the distilleries for use in the manufacture of certain liquors and a large quantity is disposed of to farmers for cattle feed.

Broken rice and paddy have sold at the following prices during the past ten years: In 1885, the former varied from $3.50 to $4.25 per 220 pounds, while paddy in the same year averaged about $3.50. The average price of 1886 was a fraction less. In 1887, the price was about the same as in 1885, and in 1888, $3.67 was paid for broken and $2.89 for paddy. The former commanded $3.86 in 1889 and the latter $2.90. There was practically no change of price in 1890 and 1891. In 1892, the price for broken was $3.28, but the statistics of that year make no mention of paddy. Prices were lower in 1893, and in 1894, broken sold for $2.31 and paddy for $1.93. Practically, the same prices have prevailed since.

It will be observed that the selling price has decreased considerably in the past ten years, and while perhaps little, if any, decline can be expected in the future, increased transportation facilities to Indo-China, which the French Government strongly encourages, renders it practically certain that prices will not materially advance.

There are no export taxes on glucose (liquid) or on grape sugar.

It is practically impossible for one not a French citizen to acquire a correct idea of the system of taxation. There are different sorts of taxes for different occupations, and those for a manufacturer are calculated upon an

entirely different basis from that of the farmer or merchant. For manufacturers, taxes are of two sorts, fixed and "proportional." These two together are known, to use the French word, as "principal," but from this principal is derived another tax, referred to as a "consequence," but which might very properly be regarded as partaking of the nature of compound interest. This latter is known as the "additional centimes," and it varies in different cities, being at Marseilles an additional tax of 1.22 francs for each franc of the principal. Of this amount, 1 franc is for the benefit of the National Government and the 22 centimes for the city treasury.

We have, then, two general divisions, the "principal" and the "centimes additionnels," of which the former is composed of two sorts of taxes, known as fixed and proportional. Fixed taxes are specific charges for each machine, as, for example, each press in an oil refinery, and is fixed at 10 francs per machine. The "proportionnel" tax is established, first, upon what would be considered a fair rent for the manufactory, and, second, on the value of the equipment, machinery, etc. The rent of the building is estimated at 5 per cent of its value, while the rent, if it may be so termed, of the equipment is fixed at 10 per cent of the value. These respective percentages are added together and the tax "proportionnel" is derived upon the basis of one-fiftieth of the total.

An oil manufactory will illustrate the process. Suppose the establishment to be of twenty presses capacity, the value of the building 360,000 francs, and of the machinery and equipment 100,000 francs. The rent value of the building at 5 per cent is 18,000 francs and of the equipment at 10 per cent is 10,000 francs; the total of rent value is 28,000 francs. We have, then, first, the fixed tax of 10 francs for each of the twenty machines, being 200 francs; second, the tax "proportionnel" of one-fiftieth of the total rent value, which is 560 francs. Adding these, we get what is known as the "principal," which, in this instance, is 760 francs.

The "centimes additionnels" are now obtained by adding 1.22 francs for each franc of the principal, making for this tax 927.20 francs, or a total of 1,687.20 francs.

Of indirect taxes, it is not possible to estimate the average annual payments of such a manufacturer. His bank checks are taxed 2 cents each; his contracts are made upon sheets of paper costing 12 cents each, and these, to be binding, are registered at a cost of 70 cents; his receipts are worthless unless stamped at a cost of 2 cents, and so on through a list of taxes of this nature.

Marseilles is, however, in many important particulars, exceedingly well located, and, considering her ocean transportation facilities in connection with the fact that the supply of rice, duty free, from the French Chinese possessions is practically limitless, it is doubtful if a manufacturer of starch sugar could find in Europe, unless in England, a more desirable location.

CLAUDE M. THOMAS,

MARSEILLES, *June 6, 1896.* *Consul.*

GERMANY.

FRANKFORT.

There is, so far as can be ascertained, but one establishment in Germany where starch sugar is made from rice, and that is the factory of Messrs. Nielsen Bros., at Bremen, who are the most important importers of rice in this country. The two firms next in rank as importers of rice are, respectively, Rickmers & Co., of Bremen, and the Hofmann Starch Factory, at Salzuflen, in the principality of Lippe, consular district of Hanover, but both of these establishments employ rice only as a material for the manufacture of starch.

From the fact that beet sugar is made so superabundantly and cheaply in Germany, and that but one manufactory of starch sugar from rice appears to exist in this country, it may fairly be presumed that the existing conditions do not favor the wider extension of that industry in the German Empire.

The German import duty on rice is 4 marks (95.2 cents) per 100 kilograms (220.46 pounds). The total import during the year 1895 was: Shelled rice, 37,055 metric tons; rice broken and in paddy, 84,210 metric tons; total, 121,265 metric tons, of which the greater portion came from the Netherlands and British India, none having been imported during last year from the United States.

FRANK H. MASON,

FRANKFORT, *April 24, 1896.* *Consul-General.*

HAMBURG.

I do not think I can answer the Department's circular calling for this report better than by submitting herewith the translation of an article appearing in the volume "Hamburg's Handel im Jahre 1895:"

If, at the close of our last year's report we expressed the hope that the year now drawing to a close would prove a favorable one, this hope has unfortunately not been realized. The pressure resting upon commerce generally, has, with short intervals, most unfavorably and continuously affected our article.

The first purchases of the article in paddy took place later than in former years, that is, not before the middle of January, and on a comparatively low basis of 5s. 7½d. ($1.36) for Rangoon. Through large offers, a tendency toward lower prices soon manifested itself, prices falling in February as low as 5s. 4½d. ($1.30). Then it became known that the February–March shipments were greater than had been anticipated, and that several shipments had remained unsold, and, in consequence, toward the middle of March, the lowest prices were reached—about 5s. 1½d. ($1.24) for Rangoon and 4s. 10½d. ($1.18) for Arracan. Soon afterwards, a decrease in shipments was noticed, which allowed prices to strengthen and opened more favorable prospects for shipments by sailing vessels arriving in the middle of the year. From the ports of shipment, as is the case every year, advices arrived that the crop had by all means been overestimated; then, reports of a strong demand in the East were spread, whereby it was made possible to drive the prices for shipments by sail to 6s. ($1.46) for Rangoon and other varieties in proportion. This state of affairs, however, did not last

long. The exceedingly favorable prospects existing in the months July–August for the European grain and potato crops, together with the increasing demand for cargoes per steamer as well as per sailing vessel, caused a gradual receding of prices to about 5s. 3d. ($1.27). Once more, prices took a little start, as the mills, toward the beginning of October, in order to secure sailing-vessel cargoes, which were expected to show better quality than the late shipments by steamer, paid up to about 5s. 7½d. ($1.36). To-day, quotations are down to about 5s. 3d. ($1.27) again for Rangoon.

Our total imports are a little greater than in 1894, and amount to about 1,388,000 bags. Of these, 779,500 bags came from the Burmah ports, namely: Rangoon, 439,000 bags; Bassein, 200,000 bags; Arracan, 69,700 bags; and Moulmein, 70,500 bags. The earlier shipments, both by steamer and by sail, were of good quality, although sometimes small in grain; later ones, as every year, were of less good quality and more or less mixed with yellow grains.

From Calcutta, there arrived altogether about 97,400 bags, principally fine table rice. Importations from Java amounted to about 31,000 bags, which turned out variously. The 118,000 bags imported from Japan were, as far as the earlier shipments are concerned, very satisfactory. A shipment which arrived in November was very much damaged by sea water. It may be mentioned that Japanese rice, although all other qualities reached lower prices, was least of all affected by a decline. The crop now being shipped costs about 8s. 9d. ($2.12), cost and freight, against about 9s. ($2.19) at the same time last year. Importations from Siam amounted to about 101,900 bags, while nothing was received from Saigon.

The fluctuations in prices for rice in paddy did not in the least influence those for the shelled article. In the months of March to May, after the arrival of the new shipments, a fairly satisfactory business was done, the interior being a heavy buyer, while the export trade, although at poor prices, consumed the stock carried over from the previous year. Since the middle of the year, the business was continuously slow, and while rice in paddy underwent fluctuations of 6d. to 9d. (12 to 18 cents), the shelled article was not advanced 10 pfennigs (2 38 cents). Owing to the tariff war with Spain, which, unfortunately, has not yet been settled, business with her colonies could only be carried on under great sacrifices; and, besides, exports to other transmarine markets, as well as to the interior, particularly in the second half of the year, were not proportionate to the imports, and, in consequence, our stock increased each month. The exports to Brazil during the latter months now and then enlivened the exceedingly slow trade. Our prices, which, in spring, for arrivals of new crop, started at about 7.50 marks ($1.79) for O sifting, had, toward the close of the year, receded to 7 marks ($1.67), and to-day stand at about 6.75 to 6.50 marks ($1.61 to $1.55); a further decline, however, is not to be anticipated, for the stock in the European markets is nowhere great, and larger shipments are not expected.

In the sale of broken varieties, an unexpected change occurred in the first half of the year. Our stock, which, at the commencement of the same, consisted of 52,000 bags, had, especially as far as poorer qualities are concerned, increased materially during the first months. Of broken Siam, we had a heavy stock, which, beginning in May, was withdrawn from the markets successively at from 4.25 to 5 marks ($1 to $1.19). For ordinary broken Rangoon, Bassein, etc., which were purchasable at 5.50 marks ($1.31), 5.75 marks ($1.37), and even up to 6.15 marks ($1.46), were paid in the second half of the year under constant demand. Since November, prices have receded to 5.75 to 5.90 marks ($1.37 to $1.40), but the demand is constantly lively, so that we enter the new year with a small stock.

Our entire importations amount to about 1,388,000 bags. Adding the visible supply on the 1st of January of this year, the whole disposable quantity would be about 1,758,000 bags. The stock at the close of the year is about 264,500 bags, so that, therefore, about 1,493,500 bags have gone into consumption, or, in kilograms, about 149,400,000 kilograms (328,680,000 pounds), against 153,000,000 kilograms (336,600,000 pounds) in 1894 and 135,500,000 kilograms (298,100,000 pounds) in 1893.

On the whole, the new crop can only be reported upon favorably. The inundations and storms reported from Japan in August have proven to be less serious than was at first stated,

so that the crop may be regarded as almost a normal one. Reports from Burmah are very favorable, the crop being estimated at 1,500,000 tons, against 1,250,000 tons last year. Prices to-day are 5s. 3d. ($1.27), basis Rangoon, lower than they have before been at this time, and a greater drop in prices is hardly to be expected through the surplus from Burmah, because shipments can hardly be looked for from either Siam, where the crop is very small, or from Saigon. As already stated, the European stock is smaller than last year, so that the shipments of the new crop will be well received, and we would venture the opinion that the business, in view of the commonly low value of the article in general, will develop into a normal and lucrative one.

There is no export tax on glucose (liquid) or on grape sugar.

A large factory would have to pay only the regular income tax, the ground tax, and the water tax.

There are in Hamburg six rice mills, one of which is situated inside the free port and yields annually from 35,000 to 40,000 tons. The yearly output of all six amounts to 125,000 tons, or about 417 tons daily, allowing three hundred working days to a year. These mills employ together about 500 persons, with average weekly wages for each of 21 marks ($5). A foreman of a mill gets from $500 to $700 a year. The other rice mills in Germany are three in Bremen, with a yearly production of 200,000 tons, or 667 tons daily; one in Osterholz, with a yearly production of 33,000 tons, or 110 tons daily; one in Flensburg, yielding annually 10,000 tons, or 33 tons daily. Besides these, there are rice mills in Amsterdam, Wiborg, Odessa, Riga, Budapest, Trieste, and Wormerveer (Holland). The best machinery for rice mills is said to be made in Hamburg, which does a considerable export business in the same. The German duty on rice entering is as follows: Shelled, unshelled, or broken, 4 marks per 100 kilograms (95 cents per 220 pounds); rice flour, 10.50 marks per 100 kilograms ($2.50 per 220 pounds); rice starch, 12.50 marks per 100 kilograms ($3 per 220 pounds); rice grits, 10.50 marks per 100 kilograms ($2.50 per 220 pounds); rice grits, under special treaty, 7.50 marks per 100 kilograms ($1.78 per 220 pounds); rice powder, without perfume, 12.50 marks per 100 kilograms ($3 per 220 pounds); rice powder, perfumed, 100 marks per 100 kilograms ($23.80 per 220 pounds); rice flour as fodder is free; starch sugar, 36 marks per 100 kilograms ($8.57 per 220 pounds).

The rice in the mills is shelled twice; first, the rough outside shell is removed and then the finer shell or skin; it is then polished and is ready for use. The fine skin is ground and used for flour (meal). The annual consumption in Germany amounts to about 120,000 tons of polished rice, while about 40,000 to 50,000 tons of broken rice are used for technical (or industrial) purposes. Polished rice is exported in large quantities, aggregating about 250,000 tons a year, chiefly to the West Indies, Brazil, and all other parts of South America. Out of the raw rice, are made polished rice, rice starch, rice grits, rice powder, and rice flour. Starch sugar is not made from rice at all in Germany, owing to the fact that the raw material is too expensive to compete with grain and potatoes.

The prices of the raw and the manufactured articles are about as follows:

Prices of raw rice, per cwt.

Description.	Price.		Description.	Price.	
	s. *d.*			*s.* *d.*	
Rangoon	5 6	$1.33	Patna	8 0	$1.94
Bassein	5 4½	1.30	Seetapatna	9 0	2.19
Arracan	5 1½	1.24	Raree	6 1½	1.49
Moulmein	5 7½	1.36	Siam, garden	6 6	1.58
Japan	9 0	2.19			

Prices of polished rice, per 110 pounds.

Description.	Price.		Description.	Price.	
	Marks.			*Marks.*	
Rangoon	7.00 to 9.00	$1.67 to $2.14	Patna	9.00 to 11.50	$2.14 to $2.74
Bassein	6.75 to 8.50	1.61 to 2.02	Seetapatna	11.00 to 12.50	2.62 to 2.98
Arracan	6.75 to 8 00	1.61 to 1.90	Raree	7.00 to 7.50	1 67 to 1.79
Moulmein	7.75 to 10.50	1.85 to 2.50	Siam, garden	8.50 to 10.00	2.02 to 2.38
Japan	11.00 to 11.50	2.62 to 2.74	Saigon	6.25 to 6.50	1.49 to 1.55

Rice starch, 41 to 42 marks ($9.76 to $10) per 100 kilograms (220 pounds) net, in cases; rice-starch flour, 20 marks ($4.76) per 100 kilograms, in bags; rice grits, 22 marks ($5.24) per 100 kilograms, in bags; rice flour, 35 marks ($8.33) per 100 kilograms, in bags; rice meal, as fodder (24 per cent), 7.50 marks ($1.79) per 100 kilograms, in bags.

The question as to whether the business of rice mills in Hamburg or vicinity is a profitable one, or likely to be so, and whether it would be advisable to put up a mill here to handle 500,000 to 1,000,000 pounds a day, or any other amount, the writer has no hesitation in answering most emphatically in the negative. In support of this opinion, it may be interesting to note the ideas of four disinterested experts on rice. Their views, as jointly expressed, were about as follows:

It might be well to put money into any other undertaking, but certainly not into a rice mill. Our industry, which formerly was a flourishing one, is to-day demoralized, not because we have to contend with overproduction, but because the producing countries have of late been building mills themselves, and are exporting the manufactured article. In this way, very considerable markets have been lost. Formerly, for instance, millions of kilograms were shipped to Brazil from Hamburg and Bremen. Now, Brazil imports directly from Burmah. There are other similar examples. Owing to contracts made with the shippers, Germany can not yet be supplied with direct shipments, but there are pessimists who predict that the time when this will be done is not far off. To these facts must be added the downward tendency in the business during the years 1892–1894, in which three years all the mills lost heavily. A very important mill has lost half its capital stock—about 600,000 marks ($142,800). Those, however, who can not live on the profits of former years will find it difficult to make both ends meet.

I would also mention that I was recently informed by a gentleman in this city that a party from Chicago not long since had visited Hamburg for the purpose of studying the rice industry, and had come to the conclusion that

Hamburg was not the proper place to start any further mills. This gentleman, I was further informed, then returned to the United States with the intention of establishing a rice mill there, but died shortly after his return to the United States.

The price of glucose (liquid) in casks is at present about 18.25 to 18.75 marks ($4.34 to $4.46) per 100 kilograms (220 pounds), while that for starch sugar, in bags (chips) or in cases containing one solid block weighing 50 kilograms (110 pounds), is 18.50 to 19 marks ($4.40 to $4.52) per 100 kilograms (220 pounds); and unless manufacturers can afford to sell at these prices, or even lower ones, they can not expect to do any business in this market in starch sugar, whether made from grain, potatoes, or rice.

The accompanying statistics give full information regarding the imports, stock, prices, etc., of rice in Hamburg. Although not called for in the Department's circular, I deem it proper to add that the exports of rice from this port during the years 1893 and 1894 were, respectively, 108,513,900 kilograms (238,730,580 pounds), valued at 20,480,760 marks ($4,874,420), and 121,901,300 kilograms (268,182,860 pounds), valued at 21,389,850 marks ($5,090,704). These figures, however, include not only the exports to foreign countries, but also those to all German localities outside of Hamburg.

In conclusion, I should like to express my appreciation and thanks to Mr. William A. Ritz, of the firm of Louis Ritz & Co., for much valuable information furnished me in the preparation of this report.

W. HENRY ROBERTSON,
Consul.

HAMBURG, *April 23, 1896.*

Imports in 1894.

Origin.	Quantity.		Value.		Average price.	
					Per 100 kilograms.	Per 220 pounds.
	Kilograms.	*Pounds.*	*Marks.*		*Marks.*	
British East India	75,712,800	166,568,160	9,668,440	$2,301,088	13.00	$3.09
Siam	17,433,000	38,352,600	1,734,790	412,880	10.00	2.38
Japan	4,403,800	9,688,360	807,700	192,232	18.00	4.28
French East India	6,600,200	14,520,000	723,890	172,285	11.00	2.62
Dutch East India	1,561,700	3,435,740	336,670	80,127	22.00	5.23
Singapore	982,600	2,161,720	106,410	25,325	11.00	2.62
United States	1,800	3,960	420	100	23.00	5.47
Bremen	28,119,100	61,862,020	5,563,750	1,324,173	20.00	4.76
Netherlands	1,555,100	3,421,220	410,340	97,660	26.00	6.18
Belgium	112,000	246,400	24,150	5,748	22.00	5.23
Schleswig-Holstein	104,500	229,900	18,120	4,313	17.00	4.05
Great Britain	81,400	179,080	12,050	2,867	15.00	3.57
France	5,400	11,880	1,010	240	19.00	4.52
Italy	17,200	37,840	5,410	1,288	31.00	7.38
Other countries	6,300	13,860	922	219	15.00	3.57
Total	136,696,900	300,732,740	19,414,070	4,620,545	14.00	3.33

Imports in 1893.

Origin.	Quantity.		Value.	
	Kilograms.	*Pounds.*	*Marks.*	
British East India	91,242,100	200,732,620	11,509,680	$2,739,304
Siam	9,268,100	20,389,820	1,007,630	239,816
Japan	12,962,200	28,516,840	2,349,560	559,195
French East India	6,867,500	15,108,500	762,120	181,384
Dutch East India	301,600	663,520	69,640	16,574
Singapore	1,345,800	2,960,760	163,070	38,810
United States	20,700	45,540	4,300	1,023
Persia	98,900	217,580	10,560	2,513
Bremen	19,579,300	43,074,460	4,295,920	1,022,429
Netherlands	1,466,700	3,226,740	406,990	96,864
Belgium	6,100	13,420	1,180	280
Schleswig-Holstein	834,900	1,836,780	175,630	41,800
Great Britain	183,500	403,700	28,170	6,704
France	30,000	66,000	9,100	2,165
Italy	70,000	154,000	19,780	4,708
Other countries	1,900	4,180	610	145
Total	144,279,300	317,414,460	20,813,940	4,953,714

Imports and stock at the close of 1895.

Description.	Quantity.	Description.	Quantity.
Imports.	*Bags.*	*Stock on hand (approximate).*	*Bags.*
Carolina	*25	Java	16,000
Java	31,089	Japan	32,000
Japan	117,789	Patna and Bengal	14,000
Bengal	95,247	Rangoon	110,000
Rangoon	439,270	Bassein	35,000
Bassein	200,101	Arracan	8,500
Arracan and Larong	69,741	Moulmein	11,000
Siam	101,869	Saigon	9,000
Moulmein	70,451	Siam	7,000
Italian	493	Madras, Ballam, etc	10,000
Ballam	2,184	Various East Indian broken varieties	12,000
Various East Indian and other varieties indirect from Bremen, London, Holland, etc	259,578	Total	264,000
Total	1,387,837		

*Also, 11 barrels.

Total imports (approximate) of rice and stock on hand in Hamburg.

Year.	Importations.	Stock at close of year.
	Bags.	*Bags.*
1885	728,451	171,800
1886	823,447	168,000
1887	1,008,565	159,000
1888	1,204,514	180,000
1889	1,339,438	216,000
1890	1,208,443	200,000
1891	1,376,377	146,000
1892	1,451,850	385,000
1893	1,490,593	520,000
1894	1,371,526	370,000
1895	1,387,837	264,500

Prices per 50 kilograms (110 pounds) of the principal varieties of rice in Hamburg at the close of the year.

Description.	1885.		1886.	
	Marks.		*Marks.*	
Java	10.50 to 18.00	$2.50 to $4.28	10.50 to 17.00	$2.50 to $4.05
Shelled	14.00 to 28.00	3.33 to 6.66	13.00 to 28.00	3.09 to 6.66
Japan	10.50 to 11.25	2.50 to 2.68	9.50 to 10.00	2.26 to 2.38
Shelled	13.00 to 17.00	3.09 to 4.05	9.00 to 15.00	2.14 to 3.57
Patna	13.50 to 15.00	3.21 to 3.57	13.00 to 15.00	3.09 to 3.57
Bengal	10.00 to 11.50	2.38 to 2.74	9.50 to 10.00	2.26 to 2.38
Madras, Ballam, etc	*6.00 to 6.50	*1.43 to 1.55	*6.00 to 6.50	*1.43 to 1.55
Arracan	6.50 to 6.75	1.55 to 1.61	6.40 to 6.60	1.52 to 1.57
Shelled	*8.50 to 10.50	*2.02 to 2.50	8.50 to 11.00	2.02 to 2.62
Moulmein	6.75 to 7.00	1.61 to 1.67	6.75 to 7.00	1.61 to 1.67
Shelled	*8.75 to 12.00	*2.08 to 2.86	8.75 to 12.00	2.08 to 2.86
Rangoon and Bassein	6.75 to 7.00	1.61 to 1.67	6.60 to 7.25	1.57 to 1.73
Shelled	8.50 to 13.00	2.02 to 3.09	7.85 to 14.00	1.87 to 3.33
Siam	*6.25 to 7.00	*1.49 to 1.67	*6.25 to 7.00	*1.49 to 1.67
Shelled	*8.25 to 10.50	*1.96 to 2.50	*8.00 to 10.50	*1.90 to 2.50
Saigon	6.25 to 6.50	1.49 to 1.55	*6.25 to 6.50	*1.49 to 1.55
Shelled	*8.25 to 9.00	*1.96 to 2.14	*8.00 to 8.75	*1.90 to 2.08

Description.	1887.		1888.	
	Marks.		*Marks*	
Java	10.00 to 16.00	$2.38 to $3.81	11.00 to 17.00	$2.62 to $4.05
Shelled	13.00 to 25.00	3.09 to 5.95	14.00 to 25.00	3.33 to 5.95
Japan	8.50 to 9.50	2.02 to 2.26	8.75 to 9.50	2.08 to 2.26
Shelled	10.50 to 15.00	2.50 to 3.57	9.75 to 15.00	2.32 to 3.57
Patna	11.00 to 15.00	2.62 to 3.57	11.00 to 15.00	2.62 to 3.57
Bengal	8.50 to 9.50	2.02 to 2.26	10.25 to 11.25	2.44 to 2.68
Madras, Ballam, etc	*6.00 to 6.50	*1.43 to 1.55	*7.00 to 8.00	*1.67 to 1.90
Arracan	6.50 to 6.75	1.55 to 1.61	6.75 to 7.00	1.61 to 1.67
Shelled	8.50 to 11.00	2.02 to 2.62	9.00 to 11.00	2.14 to 2.62
Moulmein	7.00 to 7.25	1.67 to 1.73	7.25 to 7.50	1.73 to 1.79
Shelled	*8.75 to 12.00	*2.08 to 2.86	10.25 to 12.50	2.44 to 2.98
Rangoon and Bassein	6.75 to 7.25	1.61 to 1.73	7.00 to 7.50	1.67 to 1.79
Shelled	8.50 to 12.50	2.02 to 2.98	9.25 to 12.00	2.20 to 2.86
Siam	6.00 to 7.25	1.43 to 1.73	6.75 to 7.50	1.61 to 1.79
Shelled	8.00 to 11.00	1.90 to 2.62	8.75 to 11.00	2.08 to 2.62
Saigon	*6.50 to 6.75	*1.55 to 1.61	*6.75 to 7.25	*1.61 to 1.73
Shelled	*8.25 to 8.75	*1.96 to 2.08	*9.00 to 10.00	*2.14 to 2.38

*Must be considered nominal prices, as there are no supplies.

Price per 50 kilograms (110 pounds) of the principal varieties of rice, etc.—Continued.

Description.	1889.		1890.	
	Marks.		*Marks.*	
Java	13.00 to 19.00	$3.09 to $4.52	12.00 to 19.00	$2.86 to $4.52
Shelled	14.00 to 28.00	3.33 to 6.66	14.00 to 23.00	3.33 to 6.66
Japan	10.00 to 10.75	2.38 to 2.56	10.25 to 11.00	2.44 to 2.62
Shelled	9.75 to 15.00	2.32 to 3.57	14.00 to 16.00	3.33 to 3.81
Patna	14.00 to 16.00	3.33 to 3.81	11.50 to 15.00	2.74 to 3.57
Bengal	9.00 to 10.00	2.14 to 2.38	8.75 to 10.00	2.08 to 2.38
Madras, Ballam, etc	*6.50 to 7.75	*1.55 to 1.84	6.75 to 7.75	1.61 to 1.84
Arracan	6.60 to 6.75	1.57 to 1.61	7.00 to 7.25	1.67 to 1.73
Shelled	8.75 to 10.75	2.08 to 2.56	*8.75 to 10.75	*2.08 to 2.56
Moulmein	7.10 to 7.30	1.69 to 1.74	7.25 to 7.50	1.73 to 1.79
Shelled	9.75 to 11.75	2.32 to 2.80	*9.00 to 12.50	*2.14 to 2.98
Rangoon and Bassein	6.75 to 7.25	1.61 to 1.73	7.25 to 7.50	1.73 to 1.79
Shelled	8.75 to 12.00	2.08 to 2.86	9.00 to 12.00	2.14 to 2.86
Siam	6.25 to 7.00	1.49 to 1.67	6.50 to 7.50	1.55 to 1.79
Shelled	8.50 to 11.00	2.02 to 2.62	8.50 to 11.50	2.02 to 2.74
Saigon	*6.25 to 6.50	*1.49 to 1.55	6.25 to 6.75	1.49 to 1.61
Shelled	*8.50 to 9.50	*2.02 to 2.26	8.25 to 9.50	1.96 to 2.26

Description.	1891.		1892.	
	Marks.		*Marks.*	
Java	12.00 to 17.00	$2.86 to $4.05	11.50 to 16.00	$2.74 to $3.81
Shelled	14.00 to 24.00	3.33 to 5.71	14.00 to 24.00	3.33 to 5.71
Japan	11.25 to 11.75	2.68 to 2.80	8.75 to 9.50	2.08 to 2.26
Shelled	13.00 to 15.00	3.09 to 3.57	11.30 to 14.00	2.69 to 3.33
Patna	13.00 to 15.00	3.09 to 3.57	12.50 to 14.50	2.98 to 3.45
Bengal	10.50 to 12.50	2.50 to 2.98	8.75 to 10.50	2.08 to 2.50
Madras, Ballam, etc	7.75 to 9.00	1.84 to 2.14	7.00 to 8.00	1.67 to 1.90
Arracan	7.75 to 8.00	1.84 to 1.90	6.25 to 6.50	1.49 to 1.55
Shelled	10.00 to 11.50	2.38 to 2.74	*8.50 to 10.50	*2.02 to 2.50
Moulmein	8.00 to 8.25	1.90 to 1.96	6.75 to 7.00	1.61 to 1.67
Shelled	10.50 to 12.50	2.50 to 2.98	*8.75 to 11.00	*2.08 to 2.62
Rangoon and Bassein	8.00 to 8.40	1.90 to 2.00	6.60 to 6.90	1.57 to 1.64
Shelled	10.00 to 13.00	2.38 to 3.09	8.50 to 11.50	2.02 to 2.74
Siam	7.25 to 8.50	1.73 to 2.02	5.50 to 6.25	1.31 to 1.49
Shelled	9.60 to 11.50	2.28 to 2.74	*7.75 to 11.00	*1.84 to 2.62
Saigon	7.25 to 7.75	1.73 to 1.84	6.00 to 6.25	1.43 to 1.49
Shelled	*9.50 to 10.00	*2.26 to 2.38	7.90 to 8.50	1.88 to 2.02

*Must be considered nominal prices, as there are no supplies.

Price per 50 kilograms (110 pounds) of the principal varieties of rice, etc.—Continued.

Description.	1893.		1894.	
	Marks.		*Marks.*	
Java	11.50 to 16.00	$2.74 to $3.81	9.50 to 14.00	$2.26 to $3.33
Shelled	14.00 to 24.00	3.33 to 5.71	12.50 to 22.00	2.98 to 5.24
Japan	8.75 to 9.50	2.08 to 2.26	8.50 to 9.00	2.02 to 2.14
Shelled	10.50 to 13.00	2.50 to 3.09	11.50 to 13.00	2.74 to 3.09
Patna	11.50 to 14.00	2.74 to 3.33	11.00 to 13.50	2.62 to 3.21
Bengal	8.50 to 10.00	2.02 to 2.38	7.75 to 9.00	1.84 to 2.14
Madras, Ballam, etc	6.50 to 7.00	1.55 to 1.67	6.50 to 7.25	1.55 to 1.73
Arracan	5.75 to 6.00	1.37 to 1.43	5.40 to 5.60	1.29 to 1.33
Shelled	*7.75 to 10.00	*1.84 to 2.38	*7.00 to 9.00	*1.67 to 2.14
Moulmein	6.10 to 6.30	1.45 to 1.50	5.90 to 6.00	1.40 to 1.43
Shelled	8.00 to 10.50	1.90 to 2.50	*7.50 to 10.50	*1.79 to 2.50
Rangoon and Bassein	6.00 to 6.40	1.43 to 1.52	5.50 to 5.80	1.31 to 1.38
Shelled	7.00 to 10.50	1.67 to 2.50	6.75 to 9.50	1.61 to 2.26
Siam	5.00 to 5.75	1.19 to 1.37	4.25 to 6.00	1.01 to 1.43
Shelled	6.75 to 10.00	1.61 to 2.38	5.80 to 10.00	1.38 to 2.38
Saigon	5.25 to 5.50	1.25 to 1.31	4.75 to 5.00	1.13 to 1.19
Shelled	6.50 to 7.50	1.55 to 1.79	6.25 to 7.00	1.49 to 1.67

Description.	1895.	
	Marks.	
Java	8.75 to 13.00	$2.08 to $3.09
Shelled	10.50 to 20.00	2.50 to 4.76
Japan	8.50 to 9.00	2.02 to 2.14
Shelled	11.00 to 13.00	2.62 to 3.09
Patna	10.00 to 12.50	2.38 to 2.98
Bengal	7.50 to 9.00	1.79 to 2.14
Madras, Ballam, etc	6.25 to 7.25	1.49 to 1.73
Arracan	5.00 to 5.15	1.19 to 1.23
Shelled	6.75 to 8.50	1.61 to 2.02
Moulmein	5.40 to 5.65	1.29 to 1.34
Shelled	7.00 to 9.00	1.67 to 2.14
Rangoon and Bassein	5.10 to 5.40	1.21 to 1.29
Shelled	6.25 to 9.00	1.49 to 2.14
Siam	4.25 to 6.00	1.01 to 1.43
Shelled	5.75 to 9.50	1.37 to 2.26
Saigon	4.60 to 4.75	1.09 to 1.13
Shelled	6.00 to 6.75	1.43 to 1.61

*Must be considered nominal prices, as there are no supplies.

STETTIN.

As rice is not imported directly from rice-producing countries into this port (or Danzig and Königsberg), there are no factories, mills, or other establishments at this place to work rice either broken or in paddy.

The total import of rice into Stettin from other German ports, as Bremen, Hamburg, and Flensburg, and from Belgium, Denmark, and Netherlands, amounted in 1894, in all, to 9,781 tons, and in 1893, to 10,649 tons of 1,000 kilograms (2,204.6 pounds).

The prices paid for these imports closely follow those of the places and countries just mentioned, Stettin being only a secondary market to distribute the article to the surrounding countries and provinces.

As Stettin will have, in the near future, a free harbor similar to those at Hamburg, Bremen, and Copenhagen, it might not be an unfavorable place to erect a rice starch-sugar factory, if the factory itself would import the rice direct from the rice-producing countries, which might be done as advantageously as at Copenhagen and Flensburg (Schleswig), where large mills are preparing rice for consumption.

I might add here that there are large factories—for instance, Hofmann's, of Salzuflen (Lippe-Detmold), producing annually 15,000,000 kilograms, and Union, of Minden (Hanover)—which manufacture rice starch.

An export tax on glucose (liquid) and on grape sugar is not imposed here.

The rate of taxation to which a large factory of this kind would be subject would be a state income tax, a city income tax, and trade tax, according to the extent of the factory and capital engaged.

I will, however, state that we have in these districts large factories of potato farina, potato starch, potato dextrin, and starch sugar and glucose, which articles are exported on a large scale from Stettin to England, Russia, Norway, and the United States.

If a factory for rice-starch sugar did not work exclusively for the American markets, Stettin might be a very suitable place, as shipping to and from this place would facilitate the import and export, while manual labor is obtainable at a comparatively low figure. Suitable grounds might be had within the free-harbor district, now in construction, or on the banks of the River Oder below Stettin, where the largest steamers can receive and discharge full cargoes. A railroad is also being constructed along the river banks to transport goods to and from that place along the river to Stettin, with connection with the railway to the interior.

Stettin is developing more and more from a commercial port into an industrial place. Many new manufacturing establishments are under construction.

F. W. KICKBUSCH,

STETTIN, *March 20, 1896.* *Consul.*

NETHERLANDS.

ROTTERDAM.

Importations of rice into the Netherlands during the last ten years, according to statistics prepared by Duuring & Son, Dalen & Plemp, Kolff & Witkamp, and Leonard Jacobson & Sons, brokers in Rotterdam, show the following quantities:

Year.	Java.	Akyab.	Rangoon.	Bassein.	Moulmein and Persia.	Saigon.	Bangkok.	Japan.	Total.
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*
1886.....	8,787	2,281	32,854	35,561	.....	.....	.....	18,511	97,994
1887.....	14,951	16,072	30,061	29,167	.....	.....	.....	11,041	101,292
1888.....	14,570	6,349	31,114	11,868	.....	29,471	3,811	24,334	121,517
1889.....	13,237	10,260	42,071	20,377	11	3,420	2,502	19,312	111,190
1890.....	20,100	28,294	27,554	18,313	1,614	2,430	12,844	.....	111,149
1891.....	15,337	14,505	42,054	22,938	.....	3,251	.....	7,953	106,038
1892.....	9,890	16,071	42,479	15,681	3,649	15,498	2,898	2,922	109,094
1893.....	15,360	11,597	45,400	29,497	1,802	14,865	.....	11,691	130,212
1894.....	21,361	6,535	39,708	21,211	3,455	.....	98	8,291	100,659
1895.....	18,178	11,579	42,847	31,159	4,595	.....	2,064	25,589	136,011

Cleaned rice was formerly largely imported from the British East Indies, but an agreement is now said to exist between the London sellers, on the one hand, and the millers in Germany, Belgium, and the Netherlands, on the other, to the effeet that no cleaned rice shall be imported into the latter countries.

The prices for rice in paddy, according to the above-named brokers, during the last ten years, have been as shown in the subjoined table.

Java rice in paddy per 50 kilograms (110 pounds).

Year.	Price.				
1886.....	$2.55	$1.95	$2.05	.....	.....
1887.....	2.20	1.90	1.95	.....	.....
1888.....	1.95	1.75	2.25	.....	.....
1889.....	2.10	1.95	2.25	$2.10	$2.85
1890.....	2.85	3.30	2.70	.....	.....
1891.....	2.70	2.50	.....	.....	.....
1892.....	2.50	2.20	.....	.....	.....
1893.....	2.20	2.00	.....	.....	.....
1894.....	2.00	1.90	.....	.....	.....
1895.....	1.90	1.85	.....	.....	.....

Soft kinds in paddy.

Year.	Price.			
1886.....	$1.65	$1.45	$1.65	$1.55
1887.....	1.55	1.60	1.50	1.70
1888.....	1.70	1.65	1.85	.....
1889.....	1.75	1.60	1.80	.....
1890.....	1.80	1.90	1.75	.....
1891.....	1.75	1.85	1.80	2.00
1892.....	2.00	2.10	1.70	.....
1893.....	1.70	1.80	1.60	.....
1894.....	1.60	1.50	1.60	1.40
1895.....	1.40	1.50	1.45	.....

Price figures, including charges for delivery at a supposed factory located in Rotterdam, can not be accurately given. It may be stated, in a general way, that from 37½ to 50 cents per ton should be added to the above quotations to cover these charges.

During the current year, quotations for rice in paddy have been, per 50 kilograms (110 pounds):

Month.	For soft kinds.	For Java.*
January	$1.40 to $1 50	$1.70 to $3.20
February	1.40 to 1.55	1.70 to 2.95
March	1.40 to 1.55	1.70 to 2.95
April	1.25 to 1.55	1.70 to 2.95
May	1.25 to 1 55	1.70 to 2.80
June	1.30 to 1.50	1.70 to 2.80
July	1.30 to 1 50	1 70 to 2.80
August	1.50 to 1.70	1.70 to 2 80
September	1.30 to 1 80	1 90 to 3 00

*These quotations include Java table rice.

The tendency of rice prices may, perhaps, in a general way, be determined by the size of the rice crop in the East, the size of the potato yield in Europe, the rates of freight, and the rates of exchange between London and the rice-producing countries. As freight rates at present are higher than for several years, there will, very likely, be a slight upward tendency in the quotations of rice.

What modifications of prices, if any, a factory consuming from 500,000 to 1,000,000 pounds a day would be able to secure can not be stated. Millers are reticent on the subject of rice.

Java rice in paddy is bought either by private tender, through Java banks, directly from plantations or from importers by private tender through brokers here. Burmah and other kinds of rice are chiefly bought through brokers from London sellers. The price is per cwt., delivered here, with guaranty of average quality of the season and indemnification for damaged rice.

Millers are the only buyers. There are ten or eleven rice mills in the Netherlands, the greater number and more important of which are located in or near Amsterdam. Two of these mills are said to have an individual capacity of 110,000,000 to 132,000,000 pounds a year.

The rice is cleaned by means of large millstones surrounded by perforated iron or steel screens, with the sharp points turned inward, or iron gauze. By the process of cleaning, from 15 to 20 per cent of the rough rice will come out in the shape of husks or chaff, rice meal, and broken rice; from 20 to 30 per cent is reduced to broken rice, and the remainder issues as "Voorloop," or whole-grained rice, generally, however, slightly mixed with broken grains, except in the case of Java table and the superior kinds of Japan rice.

About three-fourths of the milled rice is consumed in the Netherlands, chiefly as food. A small quantity is turned into rice starch and a small quantity is likewise consumed by the breweries. Rice meal is used as cattle food. Perhaps somewhat more than one-fourth of the milled rice—the superior grades—finds a market in neighboring countries in spite of protective duties, owing, it is claimed, to the superiority of Dutch mills in the matter of cleaning and polishing.

Cleaned or broken rice is sold in lots of 25 to 50 bags of 100 kilograms (220 pounds). The price is computed per 50 kilograms (110 pounds) with two months' credit. From the gross weight is deducted 1½ per cent draft, 2 per cent extra draft, 3 kilograms (6.6 pounds) tare per bag, and an allowance of 2 per cent discount, with 1 per cent off for cash.

I have not been able to obtain quotations for broken rice running back several years.

The prices for cleaned or broken rice, delivered free on board in the city where the mill is situated, during the present year, have been, per 110 pounds:

Rangoon	$1.70 to $2.60
Saigon	1.60 to 1.80
Bassein	1.90 to 2.70
Arracan	1.70 to 2.20
Moulmein	2.20 to 2.80
Japan	2.60 to 3.20
Java	2.60 to 6.00
Patna	2.70 to 3.20
Carolina	5.20 to 6.00

There is no export tax on glucose or grape sugar. There is an excise or internal revenue tax levied on sugar of 27 florins ($10.80) per 100 kilograms (220 pounds) and on grape sugar of 18 florins ($7.20) per 100 kilograms, which is restored to the refiner or manufacturer on exportation. The refiner and manufacturer must work under inspection and bond.

A factory is, as such, subject to no taxation in Rotterdam. All taxes are personal.

LARS S. REQUE,

ROTTERDAM, *October 14, 1896.* *Consul.*

UNITED KINGDOM.

BRISTOL.

There are no local quotations for rice or paddy in large quantities, the business being done entirely in London. The import of rice in 1895 by sea to this port was 30,588 cwts. (of 112 pounds), valued at $75,000.

No paddy is imported direct. Cargoes afloat could be purchased in London for delivery at Bristol, thus avoiding land carriage. There are no export taxes in England. It is difficult to calculate to what local taxation a factory would be subject, on account of the system of taxation pursued. It would be a rough approximation to say that from 1 to 1½ per cent of the capital invested in one actual building and plant would cover the annual local taxation. The imperial taxation would be levied upon the net profits of the business, the income tax this year being 8d. in the pound, *i. e.*, 3⅓ per cent. It may be said generally that good fuel is comparatively cheap in Bristol, that labor is cheaper than at most of the seaport towns of England, that the communication by land and sea are admirable, and that land

is to be had without difficulty, though not always freehold. There are extensive and diversified industries in Bristol, and this may be taken to indicate that the conditions for successful manufacturing are present.

LORIN A. LATHROP,

BRISTOL, *June 11, 1896.* *Consul.*

GLASGOW.

There is but little rice of any kind imported direct to Glasgow. Liverpool is the center of importation, and next to Liverpool is London, so far as Great Britain is concerned. Most Glasgow dealers buy at these two points.

Broken rice and rice in paddy do not come to Glasgow at all, as there is no consumption of rice here except for food. This consumption is much larger to the population than in the United States. The rice consumed here is called "cleaned rice."

There is no regular rice market in Glasgow, the London market and quotations being the guide as to prices.

From the books of one of the principal wholesale grocery houses here (Cooper & Co.), I have the price, per 112 pounds, of cleaned rice from the year 1882 to and including 1896, delivered in Glasgow.

Year.	Price.	
	s *d*	
1882	13 0	$3 16
1883	11 7½	2 82
1884	13 9	3 34
1885	13 9	3 34
1886	12 0	2.92
1887	13 7½	3.31
1888	10 4½	2 52
1889	12 7½	3.07
1890	13 3	3 22

For these years an extra grade or quality of rice was purchased. Cooper & Co. estimate that 1s. (24 cents) per 112 pounds should be deducted to equal the price of the common quality, the price, per 112 pounds, of which is given below for the later years:

Year.	Price.	
	s. *d.*	
1891	10 9	$2.61
1892	11 0	2.67
1893	9 10½	2.40
1894	8 0	1.94
1895	9 0	2.19
1896	8 0	1.94

There are four kinds of rice known to the trade here—"paddy," rice that comes from the field as thrashed, unhulled; "cargo" rice, partially

hulled; "cleaned," all hulled and ready for consumption; and "broken," the kernels broken and in pieces.

I have not been able to get the prices at London or Liverpool on rice in paddy, as I am informed none comes to Great Britain. Cargo rice is quoted in London at 1s. 0½d. (25 cents) lower per 112 pounds than cleaned rice; broken rice, 4½d. (9 cents) lower than cleaned rice.

The rice consumed in Great Britain comes from Rangoon and Bassein principally, some from Necransie, Moulmein, Saigon, and Siam. The rice from Rangoon brings about 1½d. (3 cents) more per 112 pounds than that from Bassein.

As far as cleaned rice is concerned, prices vary for different grades and also for different importing merchants, according to the rates of freight incurred. The price of broken rice varies under similar circumstances. The rice dealers here are of the opinion that future prices will be about the same as for the last three years.

The taxation upon a factory here would be proportioned to its rental value. This would be easily ascertained if a building were rented, as the rent paid would be the value. If the building were owned by those operating it, the assessors would fix a rental value. The tax would be, under existing laws in Glasgow, as follows: For police and other purposes, 2s. 3½d.* per pound sterling of rental value; for support of the poor, 5⅜d. per pound sterling; for school-board rates, 5d. per pound sterling. Water is charged for at the rate of 6d. per pound sterling and gas 2s. 4d. per 1,000 cubic feet.

If the occupier owns the building, there would be an additional tax of $6\frac{3}{16}$d. per pound sterling for police purposes and 9⅞d. for poor and school-board rates.

There are no export or import duties here on glucose (liquid) or grape sugar.

ALLEN B. MORSE,

GLASGOW, *March 10, 1896.* *Consul.*

LIVERPOOL.

As a result of careful inquiries, I am led to believe that Liverpool is a very suitable port for the establishment of a large factory for the manufacture of starch sugar from rice.

There are four large "liners" running from Rangoon every month to this port now, and any quantity of all qualities of rice required could be put upon the quay in about five weeks after the order is given. Besides, there is always, in addition, a large stock of rice held in the city. Rates of freight are low and the freight facilities are among the best in existence.

The total import of rice into Liverpool for the last three years has been as follows: In 1893, 145,000 tons; 1894, 128,000 tons; 1895, 127,000 tons. The rice came from Burmah (Rangoon, Bassein, Akyab, and Moulmein),

*1d.=2 cents; 1s.=24 cents.

Calcutta, Japan, Siam, Saigon, and Java. Nine-tenths of this comes from Burmah, of which the lowest quality of cleaned rice is considered most suitable for manufacturing purposes.

Rice is imported in bags of about 2 cwts. net each, and is sold either ex quay (in which case an allowance of 1s. per ton for cartage is made) or in store (with a month's rent free), the terms being cash, less 2½ per cent. That part of the rice consumed in England is from Java, Japan, and a fair proportion from Rangoon and India; the balance is exported to Cuba (mostly), the South American provinces, and Africa.

The prices during the last ten years have been gradually dropping, until last year, when they reached their lowest point. At the present time, owing to a rise in the rate of exchange and short crops in the East, values are rather higher, but still much below their real and legitimate figure, but it is anticipated that there will be a substantial recovery during the next six months, though it is not expected that the same level of prices prevalent, say, ten years ago, will be maintained. These are to-day's values, per cwt., of the descriptions of rice:

Cleaned:	
Broken	$1.52 to $1.58
Whole Rangoon	1.64 to 1.70
Japan	2.76 to 2.92
Rough:	
Rangoon and Bassein	1.37
Siam	1.27
Pabno	2.00 to 2.25

These prices are subject to the terms hereinbefore mentioned, according to the condition of purchase, whether ex quay or in store. As already stated, prices are about the lowest ever known. During the last ten years, they have fallen 48 cents to 73 cents per cwt., *e. g.*, the average prices per cwt. for cargo rough rice, open charter terms, have been:

Year.	Price.	Year.	Price.
1885	$1.70	1891	$1.92
1886	1.60	1892	1.84
1887	1.64	1893	1.52
1888	1.70	1894	1.41
1889	1.74	1895	1.37
1890	1.76		

The qualities of rice suitable for a manufactory like the one suggested are "cleaned broken," "cleaned whole Rangoon," and "rough Rangoon and Bassein." The other qualities, I am informed, would not answer the purpose.

Regarding the cost of delivering the rice at a factory, 36 cents per ton would cover all expenses either from store or quay, and, in the latter case, the allowance of 24 cents per ton for cartage, already explained, would practically cover all expense.

There is no tax of any description on either the import or export of glucose or grape sugar in this country. A factory would be subject to the local rates for municipal purposes and the ordinary Government taxes which are levied on all premises according to value or rental thereof, and in addition there would be the Government income tax of 14 cents in the pound sterling on all incomes over £160 ($778.63). The assessment for taxation is generally about one-sixth less than the rent of the premises, and the municipal rates would amount to about one-fourth of the rental.

I have already pointed out that within five weeks any quantity of rice could be put on this market; hence the fact that the total import at present does not reach 1,000,000 pounds per day is not significant. One firm here assures me that it could within twenty-four hours lay hands on 25,000 tons of rice either on the spot or to arrive within the next two or three months.

The question of location of a manufactory of this kind would be an important one. The docks at Liverpool extend over 6 miles, running north and south, and, at present, rice is landed at the south docks; hence I think a factory should be erected near these docks and the railways, somewhere between what is known as the middle and south end of the town.

There is practically no limit to the quantity of rice that could be worked and landed at the docks, which all belong to one estate and are governed by the same board. They are reputed to be the finest docks in the world, with the latest facilities for handling cargoes, etc., and to discharge a cargo of 6,000 tons of rice, weighing, classifying and delivering, and the dock quay cleared away under ten days is thought nothing of.

It may be that the rice market would prove rather difficult to a stranger, but buying could easily and probably advantageously be done through some first-class broker.

JAMES E. NEAL,

LIVERPOOL, *March 24, 1896.* *Consul.*

LONDON.

The following figures show the maximum and minimum quotations per cwt. for standard Burmah rice (usually open charter terms) during the past ten years:

Year.	Necransie.	Rangoon	Bassein.	Moulmein.
	s. d. s. d.	*s. d s. d.*	*s. d. s. d.*	*s. d. s. d.*
1895	4 10½ to 6 0	5 0 to 6 3	5 0 to 6 1½	5 4½ to 6 1½
1894	5 3 to 6 0	5 3 to 6 7½	5 3 to 6 6	5 10½ to 6 4½
1893	5 9 to 7 0	5 6 to 7 3	5 4½ to 7 1½	6 0 to 7 3
1892	6 6 to 8 6	6 3 to 8 9	6 3 to 8 7½	7 0 to 8 3
1891	6 10½ to 8 7½	7 0 to 8 9	7 0 to 8 9	7 0 to 8 1½
1890	6 6 to 8 1½	6 9 to 8 3	6 6 to 8 4½	6 0 to 6 6
1889	6 7½ to 7 3	6 10½ to 7 7½	6 9 to 7 6	6 9 to 7 9
1888	5 9 to 6 9	6 6 to 7 7½	6 7½ to 7 9	6 9 to 7 6
1887	6 0 to 6 9	6 6 to 7 1½	6 3 to 7 0	6 9 to 7 3
1886	6 3 to 7 0	6 1½ to 7 0	5 10½ to 6 7½	6 9 to 7 3

The price of cleaned broken rice has fallen during the decade in sympathy with the general fall in grain prices, though not in the same proportion. For instance, at the present time, the prices of large and small broken rice are nearer together than they have been in the history of the trade, there actually not being more than a difference of about one-sixth of 1 per cent between them, instead of about 4½ per cent at other times. There are no indications as to what future prices may be, but the tendency is downward.

There is no difficulty in obtaining stocks of the material to meet all demands.

There is no export tax on glucose or grape sugar in Great Britain.

A suitable building for a factory on the Thames can be obtained for from £2,500 to £4,000 per annum, including all local rates, taxes, and charges, or for perhaps considerably less if the depression continues.

The rates are levied by the local authorities and differ in the several parishes of the metropolis of London. They average from 20 to 25 or 30 per cent of the rental value.

The imperial income tax upon all incomes above £160 per annum is 8d. in the pound sterling, subject to certain trifling reductions in the case of small incomes.

PATRICK A. COLLINS,

LONDON, *March 20, 1896.* *Consul-General.*

CHINA.

CANTON.

A rice famine prevails in southern China and in many other parts of China. Canton every year imports large quantities of rice, as the quantity produced in this province (Kwangtung) is never sufficient for the demands of its population, and at present it is scarce and dear. Canton is certainly not the place for getting a large supply of rice at low prices.

Rice is brought from the valley of the Yangtze, from Saigon, and from Siam, usually in large quantities, for consumption; and this year there is a short supply in the Yangtze Valley and at and about Saigon.

Wuhu is the largest rice-exporting port in China and Saigon is the largest rice market south of China.

Yesterday I received the statistics of the imperial maritime customs of China, showing that in 1895 Canton imported 3,506,482 piculs (467,500,000 pounds) of rice for actual consumption as food. The present price in Canton is about $3 (Mexican silver) per picul of 100 catties of 1⅓ pounds per catty for Yangtze rice, equal to about 2¼ cents (Mexican) per pound, or about $1.22 in United States currency per 100 pounds.

CHARLES SEYMOUR,

CANTON, *June 5, 1896.* *Consul.*

HANKOW.

The price of rice in this section has varied but little in the past ten years, selling at its lowest just after harvest. As a rule, it rates from 2,000 to 2,600 cash per picul for an inferior grade, partially broken, and from 3,000 to 3,600 cash for the best quality, 1,080 cash having been the value of a Mexican dollar. A picul of rice, Chinese measurement, weighs 135 catties, or 170 pounds. Taken from the field (paddy) unhusked, 5 pounds yields 3 pounds of clean rice.

The husk is used for fuel and other purposes. At present, a partial famine is prevailing here, and rice has risen accordingly. Large quantities have been brought in from adjoining provinces, which, owing to the advance of cash to 850 to the Mexican dollar, makes a difference of about 33 per cent on its value, selling now for 10 per cent in Chinese cash more than the average price.

There is not enough rice raised in this section to supply the local demand. It would have to be brought here for a factory in larchers, steamboats, or the smaller native boats.

Glucose and grape sugar not being specified articles in the foreign tariff, they would be subject to an ad valorem duty, which is reckoned at 5 per cent.

The rate of taxation on a factory for the manufacture of starch sugar would be subject to its location. In the native towns, a tax of about 9,000 cash is levied annually on the acre, nothing on the building. In the foreign settlements, the tax levied is in accordance with the value of the buildings and the business done, to which must be added the Chinese land tax of 9,000 cash per acre, which goes to the Imperial Government.

It is impossible to give the area of the rice land in the jurisdiction of this consulate, but nearly all of the land susceptible of cultivation is now utilized in the raising of the various products indigenous to this section. There is a large area of land here that could be made productive if properly drained. It is now flooded and covered with reeds and swamp grass—a great resort for game.

The cultivation of rice is very simple. The seed is soaked and planted in what would in America be termed a hotbed. When it has grown a few inches in height, it is transplanted to fields that have been flooded, so that the roots can be safely pressed in the mud. From the time of planting, in March, till June, when it is harvested, the fields are frequently flooded. The ground is broken up with a rude one-handled wooden plow, drawn by a buffalo guided by a line fastened to its nostrils. The only other instrument in general use for farming purposes is a clumsy, homemade hoe. In some instances, they use a wooden rake. The harvesting is done in the most primitive manner. When the crop is matured, the stalk is cut with a sickle close to the ground and bound in small sheaves, after which the grain is thrashed out as soon as possible. The manner of separating the grain from the straw is most primitive. A thrashing floor is prepared, when the crop is a

large one, and it is trodden out by oxen, as was done two thousand years ago. The smaller farmers take a bundle of rice in their hands and strike it over the edge of a bin, thus separating the grain from the straw. In fact, there are many ways used by the Chinese in this process, all of them of the rudest nature. In winnowing the grain—separating the husk from the rice—a hand machine has been in use here for thousands of years. Everything in the way of cultivating rice here is done by the hardest of labor; it in no way equals the methods now in use in the United States.

Rice is brought to Hankow in native boats, and there is not enough to meet the local demand. None is sent away; in fact, the laws of China are such that rice is not allowed to be exported out of the Empire. The authorities send no tribute rice to Peking from Hankow, paying their tribute in money. An average yield of rice is 1,000 pounds per mow of 7,260 square feet. The cost of cultivating is impossible to ascertain.

The laborer here is paid at the rate of 10 cents per day and food, making about 15 cents per day.

JACOB T. CHILD,

HANKOW, *April 20, 1896.* *Consul.*

SHANGHAI.

The time when the Grand Canal was made is said to separate the middle ages of China from the modern period, and at that epoch, the dryness of the northern climate, which had been increasing century after century, rendered a great water communication necessary to link the north and south together. The dynasty that ruled over China at the epoch indicated was powerful enough to undertake and execute such an enterprise. For the first and only time in history, the Mongols then combined in one empire Persia, Russia, Siberia, and China. Another and possibly the controlling motive for making the Grand Canal was not so much to affect climatic influences as to facilitate from southern China, the newly conquered territory, the means of paying the exacted tribute in grain, then and long afterwards a sort of national currency. But whether the motive was one of national pride or as the result of conquest, the Grand Canal has enlarged the area for the cultivation of rice in China by affording additional means for the irrigation necessary for the growth and cultivation of the rice plant.

The first step in the preparation of rice culture is to soak the grain, and when it begins to swell, to sow it thickly in a small plat of ground containing liquid manure. When there is no early rain to better prepare the rice field, the necessity for water in this regard must be supplied by irrigation. When the plants are about 6 inches high they are transplanted from the small plat to the rice field prepared to receive the plant. The rice farmer holding the seedlings in one hand, wades through the mud, as it were, and sticks into it five or six sprouts. These take root without further care. Six men will

plant, in this way, about 2 acres a day, one or two of the number being employed in furnishing the others with the plants. It requires about 2½ bushels of rice to sow an English acre as indicated, and the yield will about average tenfold.

By one of the very highest authorities on Chinese history (Williams's Middle Kingdom) it is stated that the proportion of animal food is smaller among the Chinese than any other nation on the same latitude, and that with the Chinese, rice is emphatically regarded as the staff of life. The grain is deprived of its skin by wooden pestles worked in mortars by levers, either by a water wheel or, more commonly, by oxen or men. It is cleaned by rubbing it in an earthen dish scored on the inside and steamed in a shallow iron boiler partly filled with water, over which a basket or sieve containing the rice is supported on a framework; a wooden dish fits over the whole and confines the steam. By this process, the kernels are thoroughly cooked without forming a pasty mass, as when improperly cooked.

The real rice land of China is on the banks of the Yangtze River, in Anhui and Kiangsu. Irrigation there is easy and labor is cheap; and the cheapest rice is to be found in Anhui.

Probably the best place to start a factory for the manufacture of starch sugar from rice would be Shanghai or the shipping ports of the great rice-growing districts along the Yangtze River, namely, Chinkiang and Wuhu; the rice goes to northern and southern China, and the export of rice and paddy from these ports and Shanghai is given in the following tables:

Quantity and estimated value of rice and paddy exported to Chinese ports from Wuhu, Chinkiang, and Shanghai.

Year.	Wuhu.		Chinkiang.		Shanghai.		
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Price per picul* at Shanghai.
	Piculs.	*Hk. taels.*	*Piculs.*	*Hk. taels.*	*Piculs.*	*Hk taels.*	*Hk taels.*
1886	2,325,841	2,732,517	729,874	948,838	4,052,560	7,294,609	1.80
1887	1,055,822	1,132,670	544,634	762,489	3,904,789	5,076,228	1.30
1888	947,341	931,662	186,093	223,313	4,011,071	5,615,502	1.40
1889	2,116,453	2,273,408	234,625	234,625	3,874,005	5,423,608	1.40
1890	1,518,545	1,721,526	230,375	299,490	3,107,824	4,040,173	1.30
1891	3,385,988	3,900,555	241,272	313,226	5,468,668	9,843,601	1.80
1892	3,159,763	3,704,511	153,658	199,755	3,440,490	5,160,738	1.50
1893	2,091,020	2,584,877	123,479	160,522	2,644,763	3,702,669	1.40
1894	3,203,465	3,590,233	1,364,929	1,627,380	3,903,221	7,025,800	1.80
1895	815,140	1,024,199	5,834,682	8,019,385	4,893,484	12,233,710	2.50

*1 picul=133 pounds.

The average value of the haikwan tael for the above ten years was equivalent, in United States gold, to $1.22 in 1886, $1.20 in 1887, $1.15 in 1888, $1.15 in 1889, $1.27 in 1890, $1.20 in 1891, $1.07 in 1892, 96 cents in 1893, 77 cents in 1894, and 80 cents in 1895.

The price per picul of Siam and Saigon rice in Hongkong on April 22, 1896, was quoted at—

Saigon:	
Ordinary	*$2.32 to $2.35
Round, good quality	2.60 to 2.62
Long	2.70 to 2.73
Siam:	
Field, mill cleaned, No. 2	2.52 to 2.54
Garden, mill cleaned, No. 1	2.82 to 2.84
White	3.12 to 3.15
Fine cargo	3.27 to 3.30

As stated, one of the shipping ports of the great rice-growing districts about the Yangtze is Wuhu, and the following table shows the price, free on board, of rice and paddy per picul at that port for the ten years 1886–1895:

Year.	Rice.		Paddy.	
	Market price.	Price on board steamer.	Market price.	Price on board steamer.
	t. m. c. c.	*t. m. c. c.*	*t. m. c. c.*	*t. m. c. c.*
1886	1 0 6 2	1 1 7 7	0 3 4 8	0 4 6 3
1887	1 0 6 6	1 1 8 1	0 3 5 6	0 4 7 1
1888	1 0 2 9	1 1 4 4	0 3 8 6	0 5 0 1
1889	1 1 2 0	1 2 3 5	0 5 0 7	0 6 2 2
1890	1 0 9 9	1 2 1 4	0 5 0 5	0 6 2 0
1891	1 0 6 7	1 1 8 2	0 5 2 7	0 6 4 2
1892	1 1 4 5	1 2 6 0	0 5 0 2	0 6 1 7
1893	1 1 6 1	1 2 7 6	0 5 7 2	0 6 8 7
1894	1 1 5 1	1 2 6 6	0 6 0 2	0 7 1 5
1895	1 3 6 7	1 4 8 2	0 7 5 5	0 8 7 0

NOTE.—The letters t m. c. c. in the table signify taels, mace, candareens, and cash, decimally divided as follows: 1 tael=10 mace, 100 candareens, and 1,000 cash; or, reverse, 10 cash=1 candareen, 10 candareens=1 mace, and 10 mace=1 tael.

The price on board steamer includes duty, brokerage, price of putting the grain in bags, cargo-boat hire, and coolie hire; it does not include freight.

The new likin of 6 candareens 7 cash per picul, introduced in November, 1895, is not included in the 1895 figures.

The other shipping port of the great rice-growing district is Chinkiang, as shown by the following table:

Export values of paddy and rice per picul at Chinkiang during the period 1886–1895.

Year.	Paddy.†	Rice.	Year.	Paddy.†	Rice.
	t. m. c.	*t. m. c.*		*t. m. c.*	*t. m. c.*
1886	0 7 9	1 4 2	1891	0 7 2	1 4 2
1887	0 8 5	1 4 7	1892	0 8 2	1 4 2
1888	0 7 5	1 3 2	1893	0 7 6	1 3 7
1889	0 6 8	1 1 2	1894	0 7 9	1 3 5
1890	0 8 0	1 4 2	1895	0 8 2	1 5 0

*Mexican. †No paddy was exported during 1888, 1889, and 1890.

These values include export duty of 1 mace and shipping charges of 2 candareens.

The figures given in tables showing the export value of rice and paddy at Wuhu and Chinkiang include export duty and shipping charges.

The price of rice at Shanghai for 1895 was abnormally high, probably owing to the demand for it for troops; but there is a tendency for prices to rise.

The following table shows the price of rice at Shanghai for the years 1872 to 1895, inclusive. The figures of this and the other tables given are taken from the Chinese customs returns.

Price of rice at Shanghai for the years 1872–1895, inclusive.

Year.	Price per picul.	Year.	Price per picul.	Year.	Price per picul.
	Hk. taels.		*Hk. taels.*		*Hk. taels.*
1872	1.35	1880	1.20	1888	1.40
1873	1.08	1881	1.20	1889	1.40
1874	1.08	1882	1.20	1890	1.30
1875	1.25	1883	1.20	1891	1.80
1876	1.25	1884	1.20	1892	1.50
1877	1.40	1885	1.60	1893	1.40
1878	1.47	1886	1.80	1894	1.80
1879	1.47	1887	1.30	1895	2.50

There would be an export duty on glucose of 5 per cent ad valorem if shipped abroad and 7 per cent if sent coastwise in China.

A factory, if established at Shanghai, would be subject to Government land tax and municipal rates, the latter amounting to under 10 per cent of assessed valuation. If outside the limits of the foreign settlements, or if built at Chinkiang, off the concession grounds, or at Wuhu, there would be only the Government land tax.

The export of rice abroad is not allowed by treaty, and whether the absorption of so much rice in the manufacture of glucose, persumably for export abroad, would be objected to, as interfering with the food supply of the people, is a question for consideration.

The absence of the means for quick communication between the different provinces of China prevents the necessary relief of a province afflicted with crop failure from others favored by favorable crop seasons. In certain provinces of China, at this time, the people are starving, while in other provinces there is an abundance, from a Chinese standpoint. The railroad is what China most needs to bring into closer communication her distant provinces, not only as a civilizing agency, but as a means to prevent suffering.

In the factories now in operation at Shanghai, so long opposed by the conservatism of China, there are employed not less than 30,000 Chinese, all receiving living wages, and every day going to and returning from their work with happy faces. Without the factories, many of their number would probably be without employment, or, at best, without the knowledge to-day where they would obtain subsistence to-morrow.

China opposed the building and operation of factories, because, as alleged, it would throw out of employment many Chinese. The same objection has been and is being urged by the more conservative Chinese to the construction of railroads, but the ocular demonstration of the fallacy of the objection and the proof that modern inventions supply new openings for labor excite more progressive ideas in China.

T. R. JERNIGAN,
Consul-General.

SHANGHAI, *May 22, 1896.*

COCHIN CHINA.

SAIGON.

The price of rice, broken and in paddy, varies according to quality, and it would be impossible to quote a price unless I knew the quality. The value of white rice, for instance, is determined by the quantity of broken rice eliminated from it, while the value of broken rice depends upon the size of the latter, there being four or five sorts.

As regards rice usually termed "paddy," being the name of the grain as it is grown in the fields before the husk is taken off, the value of the same varies according to the demand and the importance of the crop here as well as in China, upon which latter market this one depends very largely. The present value of white rice would be $1.29 to $1.56 (United States currency) per cwt., according to sifting; of broken rice, 97 cents to $1.26 (United States) per cwt.; and of paddy, 73 cents (United States) per cwt., free on board Saigon.

I may say that prices have never at any time been so high as this year, which is due to a very indifferent crop. It is quite impossible to give any idea concerning the tendency of future prices, as this market depends chiefly upon the demand from China and the importance of the crop either here or there. Fluctuations are very great; the better the crop is, the lower the prices.

As regards the cultivation of the grain, we have two sorts—early rice and season rice. The former is sown in April and May and harvested and brought to market from the early part of November. As to season rice, it is sown in July and August, and commences to appear on the market at the end of January. The area under cultivation amounts to 1,250,000 hectares (3,088,750 acres), while the area capable of being brought under cultivation would comprise almost the whole colony. As regards the manner of cultivation, the soil is prepared and tilled as soon as the rainy season sets in, which generally takes place in April.

The only port of export is Saigon, and the rice goes to China, Japan, Philippine Islands, Straits Settlements, and Europe. On an average, exports generally amount to 600,000 tons a year, while the colony could no doubt produce one-third more than it does if all places were cultivated and if the population were greater. The colony is short of manual labor.

The import of foreign sugar is forbidden in this colony, and there being no export of sugar here, there is no export duty.

The only rate of taxation to which a large factory of this kind would be subjected is a license of $400 to $500 (Mexican), or $213.20 to $266.50 in United States currency, per annum.

E. SCHNEEGANS,
Commercial Agent.

SAIGON, *May 19, 1896.*

INDIA.

BOMBAY.

Rice constitutes the chief article of diet of more than 250,000,000 population in British India. There are no data available to show the entire acreage under cultivation or the total production of this article. A very large portion of the territory known as British India is governed by native princes, who make no statistical reports in reference to this crop to the Indian Government. The statistical bureau of India, however, receives regular reports covering very large areas, which may serve as a guide to fix approximately the extent of land under cultivation for rice as compared with other agricultural products. A report just issued gives returns for the fiscal year ended March 31, 1892, for an area of 526,000,000 acres. In the districts covered by this report, 188,000,000 acres were under crops, 24,000,000 acres bore two crops, and 32,000,000 acres were "current fallows."

A table included in the report mentioned shows the acreage of all the principal crops of India. This has a total footing of 180,784,563 acres, of which 63,529,117 acres, or a little more than one-third of the whole area of land cultivated, were devoted to the culture of rice.

There is no rice imported into India; hence the exports of this article for a series of years should show nearly the amount of surplus production that is not required for home consumption.

The following figures are compiled from official reports of the statistical department of the Government of India, and show the aggregate quantity in cwts. and value in rupees of rice exported from India in three years from April 1, 1892, to March 31, 1895:

Year.	Quantity.	Value.
	Cwts.	*Rupees.*
1892-93	27,941,003	124,087,191
1893-94	24,658,227	103,886,328
1894-95	34,303,688	138,070,364
Total	86,902,918	366,043,883

From this table, it may be deduced that the average value of rice exported, as declared to the Indian customs department, was 4.212 rupees per cwt., or, at a rate of exchange of 1 rupee=14d.=1.053 cents per pound.

Of the exports for the three years under consideration, 1,750,858 cwts. were in the husk (paddy), 15,157 cwts. were rice flour, and the balance, 85,136,903 cwts., was rice not in the husk.

The following table shows the quantities contributed for export by each of the five districts into which, for statistical purposes, India is divided:

District	Chief port.	Aggregate, three years.	Average per year.
		Cwts.	*Cwts.*
Bengal	Calcutta	21,739,937	7,246,646
Bombay	Bombay	2,460,847	820,282
Sindh	Karachi	377,690	125,897
Madras	Madras	5,055,853	1,685,284
Burmah	Rangoon	57,268,591	19,089,530
Total		86,902,918	28,967,639

Of the total quantity, the United Kingdom took less than one-sixth, Egypt more than one-fourth, Mauritius about one-twentieth, South America one-twelfth, Ceylon one-seventh, Straits Settlements one-eighth, and the balance, about one-seventh of the whole, was distributed to France, Germany, Malta, Cape Colony, east coast of Africa, Natal, Réunion, West Indies, Aden, Arabia, Persia, and other countries not specified. These proportions are not exact, but are sufficiently so to give a general idea of where the surplus of this crop was marketed.

Wholesale prices of rice for twenty years.—The datum level taken for these is the price in March, 1873, that time having been selected as the commencement of the great change which has been proceeding for twenty years in the relative value of gold and silver, the price of 1873 being taken as 100.

Year.	Price.	Year.	Price.	Year.	Price.
1874	150	1881	89	1888	110
1875	128	1882	83	1889	131
1876	111	1883	101	1890	144
1877	150	1884	142	1891	147
1878	155	1885	142	1892	162
1879	189	1886	130	1893	189
1880	136	1887	103	1894	170

Retail prices of rice for thirty-three years.—For the same reason as in the former table, 100 is taken as the level for the five years 1871–1875.

Year.	Burmah.	Assam.	Bengal.	Madras.
1861–1865	117	84	82	118
1866–1870	116	112	102	136
1871–1875	100	100	100	100
1876–1880	140	138	121	142
1881–1885	128	109	104	106
1886–1890	139	126	119	116
1891	153	140	137	136
1892	181	168	172	155
1893	154	197	168	144

During the last decade, the increase in the price of rice has ranged from 40 to 60 per cent above the datum level of 1871–1875. This increase in price is attributed to the loss in the purchasing power of the silver rupee, which is the currency of the country.

There is no export duty on rice, glucose, or grape sugar from British India.

An income tax is collected in British India amounting to 5 pies per rupee on profits earned, equal to about 2.6 per cent. Municipal and other taxes are not excessive. They differ in amount in different localities.

Bombay is not a suitable place for the location of a factory, for the reason that the whole amount of rice exported from this port (average for three years) was only 249,664 pounds per day, which is less than one-half the minimum quantity required. For the matter of ample supply, without danger of affecting the market price by creating so large a demand, Rangoon is the best and Calcutta the second best location in India for such a plant.

I have endeavored to confine my report strictly within the lines desired by condensing the facts as much as possible, and trust that in making it to cover the whole of British India I will not be considered as having gone beyond the bounds of my duty. As a matter of fact, I could not do otherwise with some of the most important facts and figures submitted, for the reason that they are given for the whole of India in the official statistical reports.

S. COMFORT,

BOMBAY, *April 27, 1896.* *Consul.*

CALCUTTA.

The last published returns of agricultural statistics for 1893–94, which for the first time include Bengal, show that in that year no less than about 68,500,000 acres, out of a total of nearly 225,500,000 acres cropped in all the British provinces of India, were laid out in paddy fields, *i. e.*, more than treble the acreage of the next most largely cultivated staple—wheat. Bengal is India's principal rice field, and the following figures indicate the extent to which this food grain is grown there as compared with the other chief producing provinces:

	Acres.
Bengal	38,200,300
Northwest Provinces and Oudh	7,902,582
Madras	6,710,212
Burmah	6,399,151
Central Provinces	4,473,344

The above figures represent, in each case, a steady increase as compared with the two preceding years. In Madras, the Central Provinces, and, of course, Burmah, as well as in Bengal, rice was in 1893–94 the most largely cultivated crop.

The fertility of Bengal, which makes it the richest agricultural province in India, is thus alluded to in the Dictionary of Economic Products:

> The districts of the whole of Bengal proper, or the great alluvial and deltaic plain between the Himalayas and the Bay of Bengal, and the provinces of Orissa, or the alluvial territory between the hills and the sea, connecting Bengal with Madras—a level area of nearly 100,000 square miles, unbroken by a single hill, rich in black mold and of boundless reproductive fertility, subject to recurrent inundation and enjoying natural facilities such as no other country in the world possesses for internal commerce and irrigation—constitute the great rice-producing area of India.

Yet, although so widely cultivated in Bengal and the other provinces referred to above, and constituting, as it unquestionably does, one of the chief articles of human food, rice is, in some parts of the country, as much a luxury as wheat is in other localities, and the growers of it are equally unable to afford to eat it themselves, substituting fare of the coarser and less expensive grains—millets and pulses. Indeed, taking India as a whole, these latter, rather than rice, may be considered as the food material of the people.

Over and above what is required to meet the demands of the enormous local consumption of rice, there is a considerable surplus available, and the foreign export trade in the staple is of large dimensions. Last year was the biggest on record, with the exception of 1890-91, the quantities shipped being, respectively, 1,686,000 and 1,723,700 tons, as compared with an average annual export, during the ten years ended with 1894–95, of 1,421,550 tons. Official returns for the first eleven months of the current year show a still further increase of 40,800 tons over the corresponding months of last year. Mr. J. E. O'Conor, in his review of the trade of India for 1894–95, pointed out that it was becoming clearer each year that the surplus of Bengal rice available for export was not augmenting, and, on the contrary, that that presidency had to import from Burmah a certain, though as yet comparatively small, quantity to fill the deficiency of rice of the commoner kinds. The quantity so imported was, roughly, 38,000 tons in 1894–95, as compared with 1,000 tons in 1888–89. Again, exports from Bengal to Indian ports have, within that period, diminished by about one-half. Still, if Bengal remains in a position tc meet the European and other foreign demands for table rice, it would appear that the export trade as a whole need not necessarily suffer materially, looking to the apparently enormous producing capabilities of Burmah as regards the coarser grain.

According to the agricultural statistics for 1893–94, there were, exclusive of current fallows, more than 11,000,000 acres of cultivable waste land in Upper Burmah and about 18,000,000 acres in Lower Burmah, as against about 2,750,000 acres and 5,750,000 acres, respectively, under crop, practically the whole of which consisted of rice. It is no doubt true, as Mr. O'Conor remarked, that Siam and Saigon have become formidable competitors, not only in Europe, China, and the Straits Settlements, but also in Brazil, and the extent to which Indian rice is subject to this competition was indicated by a table of exports from Bangkok and Saigon, which shows how these have expanded from 583,097 tons in 1889 to 1,260,210 tons in 1893

and 1,032,848 tons in 1894. In Brazil, India has cultivated an excellent market, the exports to that country in 1894–95 being 152,000 tons, while the shipments to all South American ports in the five years ended 1888–89 averaged only 40,727 tons annually. But the correctness of Mr. O'Conor's observations in this connection seems to be strikingly verified by the result of this year's trade, the returns for the eleven months ended with February last revealing a decline of shipments to South America of no less than 50 per cent on those of the corresponding months of 1894–95. On the other hand, the exports to the Straits Settlements were higher last year than in 1893–94, and a comparison of the first eleven months of 1894–95 and 1895–96 shows an excess of 57,683 tons in favor of the latter, which affords some compensation, at any rate, for the falling off as regards South America. There are, it appears, strong reasons why the loss of place in any of the rice markets is to be viewed with anxiety. Not only Siam and Annam, but also Italy and Japan are rivals in the field, and, as Mr. O'Conor further remarked, we have also to reckon with the other grains which in Europe compete with Indian rice for distilling purposes.

Some years ago, it was officially stated that, broadly speaking, one-half of India's exports of rice are converted into liquor in Europe, and should this demand abate, it goes without saying that a serious blow would be dealt to the trade, for apparently there is no other outlet worth taking into account. The trade is a valuable one to India, the exports in 1894–95 being rated at close on 137,000,000 rupees ($32,018,000)—the highest on record.

In relation to the other chief staples of export, rice ranks next to raw cotton in the current year; in 1891–92 and in 1894–95, it stood higher, and far above the two next in importance—raw jute and tea. From the vast area under rice, may be gathered some idea of the large population supported thereby, and from an agricultural point of view, too; therefore, any serious and permanent decline in the foreign demand would be disastrous, especially as the foreign wheat trade is apparently sunk into a hopeless decline, which can only be temporarily relieved in years when the crops of other countries fail.

The average annual price—number of seers* per rupee†—of rice at Calcutta and Patna, on the west, and Backergunge, on the east, was as follows:

Year.	Calcutta.	Patna.	Backergunge.
	Seers.	*Seers.*	*Seers.*
1885	9.95	16.4	14.67
1886	14.24	18.6	16.11
1887	17.93	22.48	19.25
1888	16.61	18.72	18.3
1889	13.45	15.04	13.47
1890	13.48	17.36	14.01
1891	13.38	17.58	15.81
1892	10.09	14.02	11.52
1893	9.98	16.5	10.3
1894	10.1	15.9	11.3

* 1 seer 2 pounds. † 1 rupee=33.4 cents.

In regard to the charges for hauling, etc., in Calcutta, a cart carrying 10 bags of rice weighing 2 maunds (1 maund=82⅔ pounds) each or 8 bags of 2½ maunds each will charge for the distance from the rice mart at Chetla, in the suburbs, to the jetties, from 1.4 to 1.8 rupees (30 to 35 cents); carrying the same weight, a cart would charge from the Hatkhola mart, in the northern part of the city, to the jetties, from 4 to 6 annas (6 to 10 cents), and from Hatkhola to the center of the city, say Bow Bazaar, about 8 annas (12 cents).

There is no export duty on glucose or grape sugar. There is an export duty on rice of 3 annas per maund (about 4 cents per 82⅔ pounds). A factory for making starch and glucose, if set up in Calcutta, would have to pay 200 rupees per annum trade license to the municipality. It would also have to pay municipal rates and taxes, landlord and tenant, about 22 per cent upon the rental value per annum. It would have to pay, if it took up the land, the Government rent of the land, which is not very heavy.

Wages for unskilled labor, such as truckers, sweepers, etc., are 4 annas (6 cents) per diem. Wages for skilled labor, such as the foremen in the picking, carding, roving, etc., rooms in mills, are 12 annas (18 cents) per day. Native engineers and firemen receive 1 rupee (24 cents) per diem. Coal costs 4½ annas (7 cents) per maund (82⅔ pounds).

VAN LEER POLK,

CALCUTTA, *July 20, 1896.* *Consul-General.*

JAPAN.

HIOGO.

From time immemorial Japan has been a rice-producing country. The grain is grown more extensively than any other, for the reason that it constitutes the staple food of the people.

Small holdings are the rule. There are very few large farms, and the holders of such rarely employ more than twenty men.

Emperors and feudal lords have for centuries devoted great attention to this important question; and historical records vouch for the statement that as many as eight hundred canals and numerous ponds and reservoirs for irrigation purposes were constructed in accordance with plans approved by Emperors who reigned prior to the Christian era. That number, of course, has been greatly increased since. Mountain streams have been diverted from their courses and are used by the rice grower to flood his fields in the plain. The system of irrigation is about as complete as it is possible to make it. It should also be mentioned that the yearly rainfall ranges from 60 to 100 inches throughout the country.

Soil and manure.—The fertility of the soil varies with the situation of the land, but, generally speaking, the soil is very good. As for manures, the farmer relies almost entirely on human and animal deposits; when these fail,

farms near the coast are manured with seaweed and fish. As yet, the towns and cities of Japan have no elaborate systems of drainage. The contents of urinals and closets are taken away every night to the fields and emptied into the receptacles with which every field is provided. Urine or water is poured upon it, and the manure is left for months in the vat fermenting. When it has thoroughly fermented, the liquid is ladled out and put around the roots of the growing plants.

Rice seed.—Having referred briefly to the soil, the manure, and the irrigation works, the next subject to be mentioned is the rice seed. The Japanese farmer selects this with the most scrupulous care, because he is well aware that the crop depends on the quality of the seed sown. He grows his seed in a medium soil and saves it while the plant is perfectly green, but just at the time when the seed is on the point of turning color. It is then stored in a dry place. The time for sowing is April; but a month or six weeks before that time arrives, the seed has to undergo a process of preparation. It is put into a bag and deposited in a running stream, as a rule, but is sometimes buried in the ground, the object being to get the seed on the point of budding by the time for sowing. A few days before the farmer has his ground quite ready, he takes up the bag and allows the water to drain off. The next day, perhaps, he shakes up the seed, ties up the bag again, and douches it with water, this wetting and drying process being repeated for three or four days, by which time the seed has been brought into a fit condition for sowing.

Cultivation.—The seed is first planted thickly in a corner of the field. The land is turned with a kind of spade or by a dagger-like plow drawn by a bullock. A little embankment is thrown up around the patch, and the land is then flooded. The seed is scattered upon the surface of the water, care, however, being taken to see that it is not sown too thickly, as freedom for the root insures vigor for the plant. At the end of June, the sprouts will have grown to the height of 5 or 6 inches, and they are then transplanted in bunches of from five to ten, according to the fertility of the soil, the bunches being set out about 8 inches apart. The land in which the rice sprouts are now planted has probably produced one crop of cereals already. So extraordinarily fertile is the land in some parts of the country, that three crops are grown year after year on the same field. This is no doubt due very largely to the habit of thoroughly breaking up the soil and well manuring it. The transplanting of the sprouts is usually done by females and while the field is covered with 2 or 3 inches of water. As the plants are growing, the soil is frequently broken up with a kind of hoe, but it is never allowed to become absolutely dry. Water is not only beneficial to the plant simply as supplying the necessary moisture; being stagnant, it is not without its manuring qualities; and, again, it greatly assists the growth of the plants by carrying the warmth of the sun to the roots. Straw, chaff, and dead leaves are laid at the roots of the plants, and, as before mentioned, the ground, from time to time, is saturated with liquid manure. When the rice

begins to ripen, the water is drawn off the field and the plants are exposed to the full effects of the sun in order that they may head well.

The harvest.—There are many different kinds of rice known to the Japanese farmer and dealer, the principal being wase (early rice), which is harvested about the middle of September, and okute (late rice), which is reaped in October and November. The cutting is done with a kind of sickle. Nearly all crops, it may be mentioned, are cultivated in little ridges, just as potatoes are grown in America, and mowing machines, therefore, may never come into general use in Japan so long as this ancient agricultural principle is maintained. The rice, after it is cut, is dried, either by spreading it on the ground or by hanging it in bunches on a pole fixed horizontally.

Thrashing, hulling, etc.—The process of thrashing is very primitive, the ears being drawn between iron pins fixed in a wooden bench. As the rice is released, it falls upon a straw matting, and is then hulled with a flail. The chaff is separated from the grain by the use of fans. For cleaning rice, a very simple and peculiar machine is in general use. Many of them may be seen at work in the rice stores of Osaka as one walks along the street. It is a large wooden mortar, with a pestle at the end of a heavy beam about 10 feet long, fixed on a pivot, and is set in motion by a man treading on one end of the beam. In some stores, only one of these machines is to be seen; in others, two and three; but in recent years water has been used as a motor, and some of the mills have thirty or forty of these pestles at work. Modern machinery for cleaning rice is being slowly introduced, but the Japanese do not seem to take to it kindly.

Production.—The quantity of rice produced annually in Japan for the past five years is given in the following table of official statistics, viz:

Year.	Quantity.	
	Kokus.	*Tons.*
1891	37,386,630	5,340,947
1892	41,378,956	5,911,279
1893	37,138,223	5,305,460
1894	41,815,714	5,973,673
1895	39,878,629	5,696,947

Japanese consumption of rice.—The Japanese consume all the rice, large and small, that is cleaned (but not polished) in their simple stamping mills above referred to. They have a prejudice against the grain that is cleaned in the foreign mills, believing that its contact with machinery imparts to it a bad flavor. Rice is delivered to the consumer as it comes from the miller, and is washed before it is boiled, in order to free it from the flour resulting from the milling. It is very difficult to determine whether the annual production exceeds the home demand. The question involves not only a consideration of the amount at present consumed and exported, offset by the amount imported annually into the country, but it involves also a calculation of the

quantity of wheat, barley, sweet potatoes, and other cereals and vegetables produced, to say nothing of the large and increasing consumption of bread and wheat. All these factors tend inevitably to reduce the consumption of rice; but against these, we have to remember the important fact that the population is increasing at the rate of something like 500,000 yearly, and that the natural preference among the people for the home-grown grain is very strong.

Broken grain.—Broken rice is practically unknown in Japan, and is only found in small quantities sifted from the grain polished for export in the few mills of foreign construction.

Paddy rice.—Paddy rice is not sold in Japan, it being the universal custom to hull all rice when it is harvested, except that reserved for seed.

Price of rice.—The only prices of any value to the foreign buyer are those for so-called "export rice," which consists of the first and second qualities only of brown (or undressed) and dressed (or unpolished) rice. The following semimonthly quotations for the above-described grades for the five years 1891 to 1895, inclusive, are in the currency of the Empire, namely, silver yen and sen, per picul of 133⅓ pounds, and include the labor of packing and delivery alongside the vessel, which labor is undertaken by the seller at about 4 sen per picul.

Silver quotations for best quality brown (undressed) rice, suitable for export, per picul of 133⅓ pounds.

Date.	1891.	1892.	1893.	1894.	1895.
	Yen.	*Yen.*	*Yen.*	*Yen.*	*Yen.*
January 15	2.90 to 2.95	3.30 to 3.40	2.75	3.47½	3.55 to 3.60
January 31	2.85 to 2.90	3.23 to 3.33	2.75	3.45 to 3.50	3.60 to 3.65
February 15	2.95 to 3.00	3.25 to 3.35	2.80 to 2.82½	3.52 to 3.57	3.65 to 3.68
February 28	3.05 to 3.15	3.18 to 3.25	2.82½ to 2.85	3.60 to 3.65	3.65 to 3.70
March 15	3.00 to 3.10	3.20 to 3.25	3.85	3.70 to 3.75	3.65 to 3.70
March 31	2.95 to 3.05	3.13 to 3.17	2.85 to 2.87	3.73 to 3.77	3.65 to 3.70
April 15	2.95 to 3.05	3.13 to 3.17	2.79 to 2.81	3.72 to 3.77	3.65 to 3.70
April 30	2.85 to 2.95	3.13 to 3.17	2.77 to 2.79	3.64 to 3.69	3.65 to 3.70
May 15	2.90 to 2.95	3.13 to 3.15	2.80	3.70 to 3.75	3.70 to 3.75
May 30	2.85 to 2.92½	3.00 to 3.05	2.82½ to 2.85	3.65 to 3.70	3.60
June 15	2.90 to 2.95	3.05	2.95 to 3.02	3.70 to 3.72	3.55
June 30	2.95 to 3.00	3.00 to 3.05	2.95 to 3.02	3.83 to 3.88	3.60 to 3.62
July 15	2.95 to 3.00	2.95 to 3.00	3.10 to 3.15	4.05 to 4.15	3.67 to 3.70
July 31	2.95 to 3.00	3.00 to 3.05	3.17½	4.20 to 4.30	3.75 to 3.80
August 15	2.90 to 2.95	3.25	3.33	4.30 to 4.40	4.10 to 4.15
August 31	2.90 to 3.00	3.15	3.40	4.35 to 4.45	3.90 to 3.95
September 15	2.90 to 3.00	3.15	3.30 to 3.35	4.55 to 4.70	3.90 to 3.95
September 30	3.10 to 3.20	3.05	3.40	4.40 to 4.50	3.85 to 3.95
October 15	3.10 to 3.20	3.05	3.60 to 3.65	3.85 to 3.95	3.80
October 31	(*)	3.05	3.85 to 3.90	3.85 to 3.95	3.80 to 3.85
November 15	3.65	2.95	3.50	3.85 to 3.95	3.80
November 30	3.35 to 3.50	2.90	3.45	3.77 to 3.82	3.80
December 15	3.30 to 3.45	2.85	3.42½ to 3.45	3.68 to 3.73	3.80
December 31	3.25 to 3.35	2.75	3.39 to 3.42	3.50 to 3.55	3.80 to 3.87½

* Nominal.

Second quality is reckoned at 5 sen per picul less than above quotations.

Silver quotations for Nos. 1 and 2 qualities mill-dressed rice for export, per picul of 133⅓ pounds.

Date.	1891.	1892.	1893.	1894.	1895.
	Yen.	*Yen.*	*Yen.*	*Yen.*	*Yen.*
January 15	3.55 to 3.70	4.05 to 4.20	3.35 to 3.45	4.30	4.45 to 4.65
January 31	3.50 to 3.65	4.00 to 4.10	3.35 to 3.45	4.25 to 4.30	4.55 to 4.70
February 15	3.65 to 3.75	4.00 to 4.10	3.35 to 3.45	4.30 to 4.35	4.50 to 4.75
February 28	3.90 to 3.95	3.90 to 4.00	3.35 to 3.45	4.35 to 4.40	4.50 to 4.75
March 15	3.75 to 3 85	3.90 to 4.00	3.45 to 3.50	4.48 to 4.53	4.50 to 4.75
March 31	3.65 to 3.75	3.80 to 3.90	3.45 to 3.50	4.53 to 4.60	4.50 to 4.75
April 15	3 70 to 3.80	3.80 to 3.90	3.25 to 3.45	4.35 to 4.53	4.50 to 4.75
April 30	3.65	3.75 to 3.85	3.22 to 3.40	4.30 to 4.45	4.50 to 4.75
May 15	3.65	3.70	3.25 to 3.35	4.40 to 4.55	4.50 to 4.65
May 31	3.55 to 3.65	3.65	3.30 to 3.40	4.40 to 4.55	4.35 to 4.40
June 15	3.55 to 3.65	3.55	3.50 to 3.62½	4.45 to 4.55	4.35 to 4.40
June 30	3 55 to 3.65	3.65	3.50 to 3.62½	4.65 to 4.75	4.50
July 15	3.55 to 3.60	3.50 to 3.55	3.65 to 3.75	4.75 to 4.95	4.60 to 4.65
July 31	3.55 to 3.65	(*)	3.75	5.20 to 5.30	4.65 to 4.70
August 15	3.50 to 3.65	3.90	4.00	5.25 to 5.35	5.05 to 5.10
August 31	3.50 to 3 65	3.90	4.15 to 4.30	5.20 to 5.45	4.85 to 4.95
September 15	3.50 to 3.65	3.85	4.15 to 4.30	5.50 to 5.70	4.85 to 4.95
September 30	3.70 to 3.90	3.75	4.40	5.35 to 5.50	4.95 to 5.05
October 15	3.70 to 3.90	3.75	4.50 to 4.55	4.85 to 4.95	4.80
October 31	(*)	3.80	4.65	4.85 to 4.95	4.75 to 4.85
November 15	4.30	3.45 to 3.65	4.45	4.85 to 4.95	4.65 to 4.80
November 30	4.05 to 4.20	3.55	4.30 to 4.35	4.75 to 4.90	4.20 to 4.80
December 15	4.00 to 4.15	3 35 to 3.50	4.30	4.65 to 4.75	4.60 to 4.85
December 31	4.00 to 4.15	3.30 to 3.40	4.30	4.40 to 4.60	4.58 to 4.78

*Nominal.

Second quality is reckoned at 5 sen per picul under above quotations.

The present price of rice is double what it was in 1889, the year that the export trade passed out of the hands of the Government into those of foreign merchants. This much may be said in favor of the Government monopoly, namely, that the market was kept steady by an accurate knowledge of the reserve supply. The fluctuations in value, which have occurred since, will be seen in the above tables.

Method of purchase.—The foreign buyer bargains with a native dealer as to the quality, quantity, price, and date of delivery. At the time appointed, the buyer sends his inspector to the seller's storehouses, or godowns, as they are called, to watch the weighing and packing and to carefully sample the rice at frequent intervals.

Among themselves, the Japanese deal in rice packed in straw bales, the prices being quoted in yen and sen per koku, which is a measure of capacity equal to a little over 5 bushels, or 7½ cubic feet. The weight of a koku of rice varies with the quality of the grain from 280 to 320 pounds. The measure used is a wooden box, ten of which make a koku in some parts and 100 in other parts of the country.

Every town of importance has its rice exchange, those of Osaka and Tokyo being the largest. Transactions in these exchanges are made in "spot" rice and "futures." Quotations are hourly signaled from the great centers to the towns in the country with secrecy, speed, and accuracy by

means of flags. This system has been in use from time immemorial, and is considered preferable to the telegraph for the purpose.

There are some fifty provinces and districts producing rice, and qualities differ with the districts; so that in the large exchanges there are nearly one hundred different prices reported daily, ranging, say, from 9.15 yen for Setsu to 7.35 for Hiuga rice. These slight differences are appreciated by Japanese dealers and consumers, and are largely determined by variations of quality and color, as well as by the inherent properties of the different kinds, rendering them more or less liable to deterioration by age.

Foreign buyers have rarely, if ever, had open dealings in the exchanges, as the rules and conditions imposed are not such as to admit of it. For example, in the case of "futures," the seller has the option of delivering any quality of rice at a standard of valuation agreed upon beforehand and of paying the difference in price, a plan which would not suit foreign buyers, who require for export rice of a certain quality only.

Importation of rice into Japan.—The Japanese have always had an intense aversion to imported rice. Formerly, the imports were mainly from Korea, but of late years, imports have come chiefly from Siam and British Burmah. The rice is sold in the local markets at much cheaper rates than the home-grown grain and is purchased for consumption by the poorer class of people, who mix it with wheat and barley, or perhaps with a small quantity of native rice.

The following exhibit, taken from the Japanese official statistics, shows the quantity of foreign rice imported into Japan during the six years 1890–1895, inclusive:

	Tons.
1890	273,000
1891	100,000
1892	43,000
1893	82,100
1894	197,000
1895	100,000
Total	795,000

Export of rice from Japan.—The annual export of rice from Japan during the last six years has been as follows:

	Tons.
1890	22,900
1891	119,000
1892	72,400
1893	94,500
1894	84,800
1895	107,000
Total	500,600

It will be seen by a comparison of the above statistics that the importation of rice into Japan is considerably in excess of the quantity of native rice exported.

The ports of export for rice in Japan are Yokohama, Hiogo (Kobé), Moji, and Nagasaki. The largest exports are from Hiogo (Kobé), as will be seen by the following table of statistics for the last two seasons, which also shows the countries to which the cargoes were consigned.

Export of Japan rice from Hiogo (Kobé).

To—	Season of 1894-95.			Season of 1893-94.		
	Brown.	Polished.	Total.	Brown.	Polished.	Total.
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*
Europe	57,017	16,855	73,926	36,775	13,021	49,796
America	15,386	3,848	19,234	6,232	1,673	7,905
Australia	2,441	6,323	8,710	3,485	7,732	11,217
Total	74,844	27,026	101,870	46,492	22,426	68,918

The chief markets for undressed rice are New York, Hamburg, and Melbourne; and for polished rice, Liverpool, Marseilles, and Sydney. The ports of final destination can not be given with exactness, as cargoes are cleared for intermediate ports, such as Hongkong and Suez, in order to conceal their final destination.

Prospects of increased production of rice in Japan.—The figures quoted under the head of "production" show that the average annual yield of rice has been fairly steady for several years. The exports and imports have fluctuated to such a degree, however, that they form no reliable guide to a conclusion as to whether the area of production is likely to be increased or diminished in the future. There seems to be a good demand in the foreign markets for Japanese rice of good quality, and the assumption therefore is suggested that the Japanese rice grower will devote his attention more exclusively to the cultivation of grain of the best qualities and allow the country to rely more and more on foreign supplies of the cheaper kinds, because it will be found that the land may be more profitably employed in raising the mulberry and other plants or vegetables than in growing the inferior kinds of rice.

Price of rice in the future.—It is impossible to forecast the future tendency of prices in such an important and indispensable article of trade and food as is rice to the people of Japan. Speculation in it is universal in the country, and immense sums are made and lost by the rapid fluctuations in price, due to the influence of slight changes in the weather on the prospects of the crops. The growing grain is particularly sensitive, and it not infrequently happens that a prolonged drought, or a very heavy rainfall, or a typhoon occurring at the critical time when the plant is in flower will cause very serious damage to the crop. It is due, in far greater measure, to these causes than to influences of demand at home or abroad that these violent fluctuations in price occur. Shipments to foreign countries are scarcely of sufficient magnitude to have any appreciable influence on the native market.

Export duty on rice.—Rice and its manufactured products, such as glucose (liquid) and grape sugar, are not subjected to export duty charges.

Land tenure in Japan.—Under existing treaties, foreigners are not permitted to hold land in the Empire of Japan in fee, or by what is known as "lease in perpetuity," outside of the foreign concessions. Land suitable for large factory sites is not obtainable in the foreign concession at Hiogo (Kobé), but were it otherwise, the prevailing price at which it is held is such as to render it undesirable and unprofitable for factory purposes. Under the provisions of an arrangement concluded at Kioto, March 26, 1868, between the Japanese Government and the representatives of France, England, and Holland, foreigners are permitted to lease lands for a term of years (not exceeding twenty-five) in certain described limits outside the foreign concession at Hiogo. All improvements on such leased lands, in the shape of buildings, fences, etc., if not removed prior to the expiration of the lease, revert to the owner or owners.

Taxation.—Foreigners occupying land outside the foreign concession at Hiogo (Kobé), and within the limits set forth in the arrangement of March 26, 1868, above referred to, are obliged to pay such taxes as may be levied upon their possessions for municipal and Government purposes, in the same manner as such taxes are paid by Japanese subjects.

JAS. F. CONNELLY,

HIOGO (KOBÉ), *April 21, 1896.* *Consul.*

KANAGAWA.

While rice is grown in almost all parts of the Empire, its production in the northern provinces is confined almost entirely to local needs, it being the great staple of Japanese diet. The crop is much greater in the southern provinces; Kobé and Moji, in the south, are, therefore, the principal ports from which rice is shipped, both for export and for the coast trade, and in which it is sold.

Rice lands are very thoroughly divided on account of the descent of the title for many generations, and individual holdings are very limited. The crop is, therefore, produced by innumerable small farmers and is collected in small lots by local commission men, through whom it reaches the centers of distribution and commerce. The implements used, the methods of cultivation, and the methods of hulling the grain are decidedly primitive. The latter is accomplished by means of small mills run by water power, furnished, in many cases, by the irrigating ditches which have supplied the fields or patches during the period of the growth of the plant.

Under the present treaties, foreigners can hold no interest in properties outside of the limits of the foreign concessions at the open ports. While, under the new treaties, which take effect in 1899, it will be possible for foreigners to acquire an interest in properties outside the concessions, it is not known what taxes will be levied or what licenses charged. There is no

tax, other than ground rent, levied on property of any kind within the limits of the concession at this port.

For fuller information, I inclose a copy of a memorandum, accompanied by a tabulated statement, of taxes levied on manufactories in this ken (province), in the hands and under the management of natives, outside of the foreign concession. The facts have been furnished by the ken authorities.

The export tax is 5 per cent ad valorem, as shown by copy of a dispatch from the chief superintendent of customs, herewith inclosed.

I inclose also a copy of a communication received by me from the secretary of the Yokohama General Chamber of Commerce, with three accompanying tables compiled by him.

N. W. McIVOR,
Consul-General.

KANAGAWA, *April 30, 1896.*

TAXES IN JAPAN.

In the city of Yokohama the land, so far, is classified into one hundred and twenty-seven grades. The national tax of the first class of land, at the rate of 2½ per cent of the value of land, is 45 sen (about 27½ cents) per tsubo (36 square feet), the local tax on the same being 7.65 sen (about 0.0383 cent). The land tax of the one hundred and twenty-seventh class is 0.0097 sen (about 0.0048 cent) per tsubo (36 square feet).

The local tax on a manufactory, in a suburban district, is, in Kanagawa ken, 556 yen (about $278) for entire turnout of over 500,000 yen (about $250,000) per year, while that in the urban district is 600 yen (about $300) for over 2,000,000 yen (about $1,000,000) a year.

In the one hundred and eighth class of land in Yokohama is, approximately, included the average suburban land as now valued. It pays a land tax of $0.01\frac{729}{1000}$ yen (about 0.0087 cent) a year and one-third of $0.01\frac{729}{1000}$ yen as the local (ken or province) tax, paying, besides, town or village taxes.

Land tax.—National, 2½ per cent of the value of land; local (ken or province) tax, maximum, one-third of national tax; town or village tax, maximum, (*a*) one-seventh of land tax, (*b*) one-third of land tax, (*c*) one-half of income tax.

Income tax, after deducting certain allowances.—Three one-hundredths for income over 30,000 yen, two and a half one-hundredths for income over 20,000 yen, two one-hundredths for income over 10,000 yen, one and a half one-hundredths for income over 1,000 yen, one one-hundredth for income over 300 yen.

Registration fee.—If joint stock company, three one-thousandths of the capital; if partnership, two one-thousandths of the capital.

EXPORT DUTY ON GLUCOSE AND GRAPE SUGAR.

IMPERIAL CUSTOMS,
Yokohama, March 24, 1896.

DEAR SIR: I have the honor to acknowledge the receipt of your letter dated 23d instant, asking me whether there is an export duty on glucose and on grape sugar.

In reply, I beg to inform you that these articles are subject to a tax at 5 per cent ad valorem, when they are exported from this country. I may add, however, that so far as our record goes, there was no export of the same from this port.

N. OKOSHI,
Superintendent of Customs.

N. W. McIVOR, Esq.,
Consul-General of the United States.

PRICES OF RICE AND AREA IN CULTIVATION.

YOKOHAMA GENERAL CHAMBER OF COMMERCE,
Yokohama, April 15, 1896.

N. W. McIVOR, Esq.,

United States Consul-General, Yokohama.

SIR: In reply to your communication of March 23 embodying questions on (1) price of rice, broken and in paddy, for the last ten years, and (2) area under rice cultivation, etc, I have the honor to submit the following:

(1) *Price of rice, including charges attendant upon delivery at Yokohama.*—I take it that this means price of export rice, and would suggest, as Yokohama is not a port of export for this grain, that the prices ruling at the principal port of export—Kobé—should be taken as normal. I append the figures of export from Yokohama and all Japan for the years 1884 to 1895, which will bear out my assertion.

(2) *Area under rice cultivation, etc.*—A second table gives the statistical figures taken from the Revue statistique of the general statistical bureau of the imperial cabinet of the area under cultivation and the annual production for the ten years 1884 to 1893 (later figures are not available yet), in which, for your convenience, I have converted the Japanese square cho into acres and the koku into United States standard bushels.

Area capable of being brought into cultivation.—The increase from 1884 to 1893 (ten years) is but 6¼ per cent, and for fifteen years (from 1879) 9 per cent, an almost safe indication that much more land will not be available for further great increase.

Ports of export.—The two principal ports of export are Kobé for the southwestern part of this island and Moji for the island of Kiushu.

Countries to which exported.—A third table, giving the export to different countries in 1895, will give a fair indication of the consuming markets of Japanese rice.

O. KEIL,
Secretary.

Export of rice from Yokohama and all Japan during the years 1884–1895.

Year.	Yokohama.		All Japan.	
	*Piculs.**	*Tons.**	*Piculs.**	*Tons.**
1884	15,173	903	1,137,260	67,694
1885	13,592	809	318,041	18,931
1886	66,800	3,976	1,387,439	82,586
1887	10,926	650	893,253	53,170
1888	54,127	3,222	3,313,427	197,228
1889	15,506	923	3,277,249	195,074
1890	461	27	385,027	22,918
1891	1,068	63	1,998,648	118,967
1892	4,353	253	1,216,746	72,425
1893	2,005	119	1,589,073	94,588
1894	18,711	1,113	1,425,780	84,868
1895	1,261	75	1,798,983	107,082

*16.8 piculs=1 ton.

Area under rice cultivation and total production during the years 1884–1893.

Year.	Area.		Total production.	
	*Square cho.**	*Acres.*	*Kokus* †	*Bushels.*
1884	2,605,720.8	6,385,840	26,349,883	134,894,274
1885	2,621,987	6,401,197	34,158,169	174,867,622
1886	2,628,015.1	6,415,970	37,191,424	190,395,916
1887	2,637,069.3	6,462,666	39,999,199	204,769,899
1888	2,685,986.9	6,582,548	38,645,583	197,840,265
1889	2,726,538.9	6,681,929	33,007,566	168,977,283
1890	2,747,797.4	6,734,029	43,037,809	220,325,608
1891	2,757,132.1	6,756,904	38,123,548	195,767,785
1892	2,755,101.9	6,751,928	41,378,956	211,833,358
1893	2,769,478.9	6,787,162	37,199,663	190,438,095

* 1 square cho=2 4507 acres. † 1 koku=5.11935 bushels.

Export of rice to different countries in the year 1895.

Exported to—	Quantity.	
	Piculs.	*Tons.*
Great Britain	405,596	24,143
Hongkong	333,918	19,876
Germany	292,803	17,429
United States	210,773	12,546
Australia	185,881	11,064
France	143,218	8,525
Siberia	62,861	3,742
Holland	62,160	3,700
Austria	27,300	1,625
Canada	24,247	1,443
Belgium	20,209	1,203
Turkey	5,560	331
China	5,313	316
Korea	2,609	155
Other countries	16,535	984
Total	1,798,983	107,082

NAGASAKI.

In reply to instructions, I transmit herewith the following report on the rice crop of southern Japan:

As cotton is to the Southern States of the United States, as tobacco is to Cuba, so is rice to Japan, representing as it does most of the wealth and luxury she enjoys. In feudal times, all incomes, whether of daimios or individuals, were expressed in kokus (1 koku=5.11935 bushels) of rice.

Throughout the whole of southern Japan, almost all available land lying in valleys and even extending far up the sides of hills and mountains is divided by small mud dikes into irregular squares for the cultivation of the rice plant. The usual time for sowing rice is at the end of April and beginning of May, and it requires six months for its proper development, the harvest being in October or beginning of November. As an abundance of water is a first requisite, advantage is always taken of the seasons of the greatest rainfall. An average temperature of 20° C. (68° F.) is required for the production of a good crop.

When the planting commences, a small patch of each field is converted into a seed bed; the ground of this bed is covered with manure. Water is afterwards introduced until the bed is covered to the depth of 4 to 6 inches. The seed, after being soaked for several days, is scattered over the surface of the water, and, sinking into the mud, sprouts in from four to five days.

The field having been properly dammed and flooded with water is now ready for the reception of the young plants, which are transplanted about six weeks after sprouting. They are planted in bunches of four or five at intervals of 5 to 6 inches.

During the first two or three months, irrigation is carefully attended to, and at this time the valleys are converted into marshes, with only the road dikes affording communication from place to place. About the last of August the plant blossoms, and from the last of October or first of November the harvest takes place.

In cutting the rice, short sickles are used. Thrashing is done by means of the flail, by passing the stalks through an apparatus resembling an inverted rake, or by still more primitive modes, as striking against the edge of a barrel, etc. Large wooden troughs are commonly used for hulling.

The principal instruments used by the Japanese in the cultivation of the rice plant are: The midzu-kuruma, a wooden wheel, worked by man power, for raising water to a high level; various cutting implements, as the tsorubashi, togua, kusa-kiri, and kama; many forms of rice-cleaning machines, worked by hand or water power.

Rice, after hulling, is packed in straw bags containing 1 picul (133⅓ pounds) and is transported on the backs of ponies and bullocks to the nearest seaport, where, by junk or steamboat, it is conveyed to large ports of shipment. Most of the rice grown in southern Japan is controlled by one or two large native houses in Osaka and Hiogo, Kobé being the principal port of shipment for rice from southern ports.

Imports and exports of rice from Nagasaki.

Year.	Imports.				Exports.			
	Quantity.	Value.	Value per picul.	Value per picul in United States gold.	Quantity.	Value.	Value per picul.	Value per picul in United States gold.
	Piculs.	*Yen.**	*Yen.**		*Piculs.*	*Yen.**	*Yen.**	
1886.....	118	219	1.85	$1.03	614,056	1,281,743	2.84	$1.58
1887.....	2,488	4,591	1.84	1.02	243,418	525,696	2.18	1 20
1888.....	842	1,471	1.74	.97	640,922	1,266,474	1.97	1.09
1889.....	1,887	4,929	2.61	1.45	692,907	1,398,716	2.18	1.21
1890.....	147,431	445,301	3.02	1.68	26,082	84,173	3.22	1.79
1891.....	19,570	48,148	2.46	1.37	65,998	203,714	3.08	1.71
1892.....	10,707	28,727	2.67	1.48	69,470	225,055	3.23	1.79
1893.....	149,379	397,491	2.66	1.48	73,634	243,966	4.67	2.59
1894.....	352,084	981,899	2.78	1.54	67,093	271,315	4.04	2.24
1895.....	60,316	185,118	3 06	1.70	54,509	211,790	3.88	2.15

*The value of the silver yen on April 5, 1896, was 53 cents in United States gold.

As indicated by the above table, the rice crop is preeminently a speculative one, the price being governed by many circumstances, as the amount of rainfall, the price in other countries, etc.

Japanese rice, however, at all times, commands a higher price than that grown in China, Java, or India. It has been shown by experiments undertaken that the rice grown in this district contains 5 per cent more water than that grown in Saigon, China, and in the northern districts of Japan. I append an analysis of Japan rice:

Constituents.	Unhulled common rice.	Hulled glutinous rice.
	Per cent.	*Per cent.*
Raw protein	7	8.89
Raw fat	2.29	0.68
Raw fiber	4.58	0.76
Starch		76.98
Dextrin	84.76	3.35
Sugar		8.65
Ashes	1.37	0.69

A factory owned by foreigners could only be built within the foreign concession. In 1899, however, the new treaty goes into force, allowing foreigners to lease land for fifty years or less anywhere in Japan. At present, the land taxes are, first, 40 yen per 100 tsubo (tsubo=6 by 6 feet); second, 30 yen per 100 tsubo; third, 12 yen per 100 tsubo. As, however, all the land in concession is held on perpetual lease by foreigners, the price of land would vary according to situation.

There is an export tax on glucose (liquid) of 5 per cent and on grape sugar 20 sen (1 sen=nearly 10 cents gold) per picul (133⅓ pounds).

Paddy rice is comparatively unknown here. The price to-day (April 20) for broken rice is 2.80 yen per picul, but it is unobtainable in large quantity.

W. H. ABERCROMBIE,

NAGASAKI, *April 20, 1896.* *Consul.*

SIAM.

BANGKOK.

Siam is one of the chief rice producing and exporting countries of the world. The quality of the product is high, and there is always a ready market for it when the demand for any rice is good or when the ordinary conditions are favorable. Were the Siamese Government to take greater interest in extending the area of cultivation and fostering the growth of paddy, this area could be vastly increased. There are few, if any, lands better suited to rice production. The greater portion of Siam is a low, alluvial plain, most extensively watered by rivers and numerous intersecting canals, which serve the double purpose of flooding the paddy fields and providing means

of transport. As one travels through the interior, it gives the impression of being an immense garden, rich in soil, abundantly watered, but growing up to weeds, because so much of it is uncultivated. But wherever the jungle or wild grass, brush, or other tropical growths are removed, paddy can be grown with remarkable ease and with splendid returns to the grower if he uses proper care and remembers that, with such prolific soil, his fields must be kept well freed of natural vegetation, which springs up with no effort.

Along the main streams, like the Menam and its branches, as well as the principal canals, like the Klong Kui Mai, there is practically no unused land; but on leaving these for points more in the interior, large areas are seen uncultivated. Were such lands correspondingly located in Japan or in Europe or America, every foot would be producing to the limit of its capacity. Some effort to open up new paddy territory has resulted in the building of canals and the placing of extensive areas under cultivation, but litigation over ownership and title has delayed the full consummation of the plan. This scheme was treated by me in a report on "Irrigation in Siam" in the May, 1896, number of CONSULAR REPORTS.

The cultivation of paddy is regulated by the seasons. Of course, all sowing, planting, and growing must be done during the rainy season, which usually begins about the 10th of May and ends about the last of October. June and July are the principal months during which the fields are well started.

Garden rice, which includes that which is transplanted from its original bed to larger sections and arranged in bunches of a few stalks, each of regular intervals or distances, is now the chief product of Siam. This is termed "nassuan," in contradistinction to "namuang," or field rice, which is sown broadcast and not transplanted. The nassuan, or garden rice, is superior to the namuang, or field rice, and commonly brings 2 or 3 ticals* more per coyan.† The former has a long, thin grain, while the latter is shorter and fatter. At one time, most of the paddy or rice was namuang, but of late years the acreage and supply of nassuan has outstripped it. This is natural; otherwise, the Siamese product could hardly compete with that of Burmah, India, and China.

About the time the crops are well started, the rains will have so flooded the streams that the water sets back or flows into the fields and seems to cover a greater portion of the country to a depth of from 6 inches to 2 feet. In some sections, a small boat can travel for many miles through paddy fields and yet not go in the channel of any canal or creek. Nearly all the fields are also carefully arranged with terraces, division walls, and small canals, which provide equal distribution of water and allow as little as possible to run to waste. Late in the season, when the rains are over and the water is quite low, numberless foot-power pumps are set to work and they can be seen and heard all over the land. Their monotonous squeak, as the buckets

* Tical is the unit of Siamese currency and is equal to 60 cents silver or of a Mexican dollar, as 5 ticals equal $3 (Mexican).

† 1 coyan=2,667 pounds.

follow each other on their endless chain, makes a sound as familiar in the drier months as that of Siamese drums on moonlit nights or the dull chant of priests in the countless Buddhist temples.

The paddy, planted by hand, is harvested by hand, put together in small clumps to dry, then into larger bundles, and, finally, thrashed out in the main by the tread of bullocks over a bed of hard-packed clay and partially with a flail. The product is then sold to regular paddy dealers or middlemen, who take it to Bangkok in boats and sell to the millers. These middlemen, it may be noted, are the ones who make the most money, oftentimes dictating prices both to producer and miller. They are usually Chinese, although the majority of producers are Siamese. Thousands upon thousands of paddy boats go to and from Bangkok at all seasons of the year and few rivers in the world present a more animated appearance than the Menam. Add to these, hundreds of steam launches, myriads of all varieties of smaller craft, and also the large ocean cargo steamers, and the port of Bangkok, with its branching canals, is a place that suggests large business and other interests not to be despised or underrated, as is the tendency in neighboring ports.

The chief places to which rice is shipped are Hongkong and Singapore, while Europe and South and North America buy some in the order named. From Hongkong, it is sold to points up and down the lower China coast and a little to the United States; from Singapore, it is sold to Java, the Straits Settlements, and Malay States. There is a line of fourteen steamers, averaging about 1,200 tons each, running between Bangkok and Hongkong and one of eight steamers, averaging 800 tons, between Bangkok and Singapore, of which the principal export cargo is rice. Freight rates on rice are now very low, being 15 cents in silver (about 8 cents in gold) per picul* to Hongkong and 10 cents to Singapore. This is the lowest reached for some time and is due to special conditions of competition. The average rate to Hongkong might be said to fluctuate between 15 and 25 cents (silver); to Singapore, between 10 and 20 cents. On other freights, such as measured merchandise, etc., the regular rates are $10 in silver ($5.30 in gold) per ton of 50 cubic feet to Hongkong and $6 ($3.18 in gold) to Singapore. Were a large trade to develop in some line, such as shipping sugar made from rice, I am sure that special and favorable rates could be easily obtained, as the shipping companies are managed by liberal, businesslike men.

In 1895, 7,726,636 piculs of rice, at a value of $14,649,975 in silver ($7,764,475 in gold), were exported from Siam, not including 50,248 piculs of "broken" rice, valued at $90,158, and 25,469 piculs of paddy, valued at $27,971. In 1894, 8,152,297 piculs, valued at $16,358,574 in silver ($8,660,034 in gold), were exported, not including 350,073 piculs of "broken" rice, valued at $486,346, and 30,121 piculs of paddy, valued at $50,364. These figures show decreases, but they were due to conditions which might change in another year to increases.

* 1 picul=133⅓ pounds.

Exports in 1894 and 1895.

Destination.	1894.		1895.	
	Quantity.	Value in silver.	Quantity.	Value in silver.
Rice.	*Piculs.*		*Piculs.*	
Singapore	1,256,199.91	$6,395,872	2,605,076.58	$4,940,918
Hongkong	3,507,751.92	7,015,503	4,642,788.03	8,435,355
China	6,462.99	12,958	8,644.12	19,223
Europe	797.099.18	1,519,738	.....	.....
Rio de Janeiro	388,570.88	1,075,714	206,592.24	630,945
Bombay	2,834.68	5,318	631.5	1,875
The coast	10,482.65	20,968	10,453.45	31,359
Other countries	182,195.21	312,503	252,450.77	590,300
Total	8,152,297.42	16,358,574	7,726 636.69	14,649,975
Decrease	.....	.....	425,660.73	1,708,599
Broken rice.				
Singapore	113.218.91	172,244	2,939.64	5,003
Hongkong	236,854.83	314,102	47,308.4	85,155
Total	350,073.74	486,346	50,248.04	90,158
Decrease	.....	.....	299,825.7	396,188
Paddy.				
Singapore	4,252.03	6,638	17,588.32	18,661
Hongkong	23,296	41,933	1,660.99	1 992
China	2,573	",793	517.61	473
The coast	.....	.....	5,702.3	6,845
Total	30,121.03	50,364	25,469.22	27,971
Decrease	.....	.....	4,651.81	22,393

To understand what a rice-milling center Bangkok has become, it is noted that there are now thirty mills here varying in capacity from 500 to 3,500 piculs (66,650 to 466,500 pounds) per day of twenty-four hours. During the last ten years, the number of mills has nearly doubled. One or two very large ones are now in course of erection. This is a condition which should show persons who are discussing the feasibility of this location for a plant that it is well esteemed, at least in some respects, while the increase of steamers, which has more than doubled in the same period in the lines above named, shows the confidence of the owners in Bangkok's future as a rice milling and exporting port. There is no other port between Singapore and Yokohama that can compare with it, except Saigon, and that is laboring under unfavorable and burdensome taxes.

Bangkok offers a peculiar advantage to foreign mill owners. There is no tax whatever on the mills or plant. In fact, the only charge is the export duty of 4 ticals per coyan ($1.27 per 2,667 pounds) on rice. There is another distinct advantage—fuel cost is nil, as paddy husks furnish more than enough fuel for the boilers and make a good fire. The water is not hard on boilers, and native engineers can be obtained at 30 to 40 ticals (about $9.50 to $12.75 in gold) per month, but, of course, these must always be under a competent foreigner who has charge of the whole establishment

and receives about $300 silver* (about $160 in gold) per month. Common labor about the mills—coolies, etc.—all work by the piece, and are under the general charge of headmen, who belong to certain societies. They earn in this way fair wages, but they give satisfaction. Labor is abundant and seldom causes trouble.

Good locations for mills can be secured on deep water, so that steamers can be loaded with one handling of goods; and in the same way all the paddy is brought to the mills with minimum expense of handling. This is to be remembered in favor of Bangkok, as all extra costs remove so much from profits.

Coming now to construction of plants, I would make the general statement that the cost is reasonable and not above the average in other places. While timber or lumber is not cheap, the kind generally used (teak) is excellent in quality and will stand years of hard wear. Native bricks, which, if well laid, will suffice for foundations and common work, cost now about 7 ticals ($2.23 in gold) per thousand, about 2 cubic yards. Pressed brick and kinds used about boilers and for chimneys cost from 18 to 20 ticals per thousand. Masons and carpenters (native), who can be depended upon, earn about 1 tical (32 cents in gold) per day; coolies, for carrying and doing common work during construction, earn from 40 to 50 cents (21 to 26 cents in gold) per day. Nearly all work, however, is done by Chinese contractors, who can do it at less cost than would be reached by computing from the above figures. Corrugated iron, which is always used in large quantities for sides and roofs of buildings, costs at wholesale 7 cents (about 3¾ cents in gold) per pound. Foundations for all buildings require piling, but the piles are usually only about 10 feet long by 8 inches in diameter, being placed in trenches first dug to a depth of 2 to 4 feet. On top of these is placed concrete for 2 feet and then brickwork of 2 feet, on which rests the wooden frame. Concrete costs, to make and lay, about 8 ticals ($2.54 in gold) per cubic yard, using first quality of cement. Brickwork costs about the same per cubic yard.

If land can not be purchased, it can usually be leased at a reasonable figure.

Climate works no special disadvantages to mills, if well managed and looked after. Engineers and managers can stand the climate and keep well if they limit the number of "whiskies and sodas" they consume per day.

While Bangkok is a typical Asiatic city—great and filthy—it has a considerable foreign colony, who live in apparent comfort. With some modern innovations of electric lights, electric street railways, telephones, ice factories, etc., it would, of course, be much more attractive.

Coming now to the important point of the price and quantity of paddy as supplied to factories, I note the following: At the present moment, the average price of paddy is 78 ticals ($24.80 in gold) per coyan (2,667 pounds),

*Silver quotations are regularly used in this report, because all business in this part of the world is done in silver and gold reductions alone can not give a true idea of the situation.

the highest figure it has reached in years. As high as 81 ticals ($25.75 in gold) has been paid for the 1895–96 crop, but it began at 75 ticals, and has remained most of the time at 77 and 78 ticals. It would seem as if the next turn should be downward, but I am not sure. Going back over a few years, I find that the 1889–90 crop brought 59 ticals ($18.76 in gold) per coyan in May and 55 ticals (about $18 in gold) in September; the 1890–91 crop, 62 ticals (about $20.50 in gold) in December, 60 ticals (about $20 in gold) in January, and 62 ticals again in September; the 1891–92 crop, 71 ticals (about $24 in gold) in November and 64 ticals (about $21 in gold) in August; 1892–93, 58 ticals (about $19 in gold) in November and 48 ticals (about $16 in gold) in August (the lowest in many years—an unusually large crop); 1893–94, 54 ticals (about $18 in gold) in November and 67 ticals (about $22 in gold) in the following September; 1894–95, 70 ticals (about $23 in gold) in November and 67 ticals (about $22 in gold) in September; 1895–96, 75 ticals (about $25 in gold) in November and 78 to 81 ticals in August. Hence, the tendency has been up, but the price may go down if the next crop is abundant.

As to supply, it varies year to year from 8,000,000 to 12,000,000 piculs (1,064,000,000 to 1,596,000,000 pounds), seldom reaching the latter figure. Whether a rice-sugar company could obtain the 500,000 to 1,000,000 pounds per day required would depend largely on the state of the market and size of crop, but I am of the opinion that Siam would provide the paddy as readily and as cheaply as any other point in Asia.

For a company to manufacture starch sugar, I would mention another condition most favorable to their enterprise—there is no export tax on sugar; according to the treaty itself, only a small "inland" or "transit" duty.

In conclusion, I have the honor to submit that the parties who have requested this information can not do better than visit Bangkok and study the field. I would be pleased to give all assistance in my power.

They have nothing to fear from the infliction of unjust or discriminating laws, inasmuch as they are under the jurisdiction of their own consulate-general, with its exterritorial rights.

JOHN BARRETT,
Consul-General.

BANGKOK, *August 15, 1896.*

SUPPLEMENTARY REPORT.

The area of paddy land under cultivation is, approximately, 6,000,000 rais (2.45 rais=1 acre), or about 2,450,000 acres.

There is still an area, for rice and other cereals, of about 4,000,000 rais (about 1,633,000 acres) that might be brought into cultivation, although this estimate is considered too low by many authorities.

In the last three years, the prices of paddy have shown the following varying figures, per coyan of 2,667 pounds, reduced to American currency:*

*These figures differ from those in the preceding report, as there are no standard data and information must be obtained from different companies.

Kinds.	1894.	1895.	1896.
Garden rice	$20.50 to $23.25	$21.00 to $23.75	$22.25 to $27.00
Field rice	16.00 to 19.00	17.50 to 20.50	20.50 to 22.25

These years thus show a tendency upward, but much will always be dependent on the condition of the trade and the harvest.

There is no export duty on sugar, but the different kinds are subject to inland duties, the most important of which are as follows: White sugar, 16 cents per picul; red sugar, 5¼ cents per picul; thick liquid, 100 thanans (about 1 picul), 23¾ cents; palm and cocoanut sugar, 80 cents per 100 mohs (moh is a native pot measurement).

JOHN BARRETT,
Consul-General.

BANGKOK, *October 2, 1896.*

STRAITS SETTLEMENTS.

SINGAPORE.

Rice has been and still continues to be cultivated in various parts of the Malay Peninsula, but not to anything like an extent sufficient to meet the requirements of the natives, with whom it constitutes the principal article of diet. Considerable quantities of the grain are therefore annually imported both for local consumption and distribution among the different commercial centers with which this port is in direct communication. The bulk of the imports are from Siam, Burmah, Saigon (French Indo-China), India, Java, and China; the bulk of the exports to the two latter countries, Japan, the native Malay States, and Australia. From the three tables which I attach herewith, will be seen the quantity of rice and paddy exported from Saigon during the last ten years, the quantity of rice, paddy, and meal exported from Rangoon (Burmah) during the same period, and the quantity of rice imported into Singapore during the last three years.

The actual values here per coyan of 40 piculs (5,330 pounds) is: For white rice, Rangoon, Straits quality, $112 (Mexican); Siam white rice, $132; Saigon white rice (nominal), $110 to $120; for broken rice, Siam white broken rice, $95 to $100; Rangoon white broken rice, $80; paddy (nominal), $80.

As to the variation of prices, it is impossible to give any reliable figures; within the last ten years, prices have fluctuated, for Rangoon white rice, from $90 to $130 (Mexican); Siam white rice, from $100 to $150; Saigon white rice, from $97 to $147. About the tendency in future prices, nothing can be said.

At present, there are only a few small rice mills at Singapore, in the hands of Chinese, and of scarcely sufficient importance to deserve consideration.

There is no export tax here on glucose, no duties on articles entering Singapore, and only an assessment of 10 per cent for municipal purposes on buildings within the town limits.

Considering these facts and the exceptional advantages which this port possesses from being situated midway upon the great maritime thoroughfare between the far East and the far West, its proximity to the great rice-producing regions of Asia, and numerous established lines of communication with these on the one hand and Europe on the other, with every facility for the extension of such lines to the United States, I am decidedly of the opinion that here the extraction of starch sugar from rice could be carried on on an extensive scale and most successfully, and, in view of the cheapness of labor, at little cost.

Exports from Saigon of rice and paddy during the last ten years.

To—	1895.	1894.	1893.	1892.	1891.
China:	*Piculs.**	*Piculs.**	*Piculs.**	*Piculs.**	*Piculs.**
Hongkong	7,210,773	4,905,498	5,512,774	3,860,274	4,039,856
Swatow and Amoy	53,199	145,059	619,220	.....	.....
Shanghai	.....	.....	.....	.....	2,538
Japan	204,399	311,805	71,988	.....	58,283
Formosa	.....	.....	15,111	.....	.....
Tongking	.....	.....	.....	.....	8,172
Annam coast ports	1,672	.....	107,927	.....	.....
Philippine Islands	262,979	626,941	522,748	852,215	1,252,180
Singapore	546,127	959,805	1,267,060	1,654,785	717,439
Java	300,826	1,074,895	744,970	66,122	24,703
Nouméa	18,136	12,985	13,738	8,752	.....
Mauritius and Réunion	.....	.....	10,703	26,433	16,572
Europe	1,199,031	1,377,277	2,059,216	2,837,048	506,127
Rio de Janeiro	.....	.....	55,473	.....	.....
Victoria	.....	.....	.....	.....	19,336
Total in piculs.	9,697,142	9,414,265	11,000,928	9,365,689	6,645,206
Total in tons	577,211	560,373	654,817	557,478	395,548

To—	1890.	1889.	1888.	1887.	1886.
China:	*Piculs.**	*Piculs.**	*Piculs.**	*Piculs.**	*Piculs.**
Hongkong	5,637,578	2,740,368	5,110,288	5,950,563	7,382,774
Swatow and Amoy	105,072	29,093	196,396	206,736	80,025
Japan	767,531	.....	.....	.....	.....
Hoihow	.....	.....	.....	.....	13,279
Tongking	58,800	501	306,125	250,732	.....
Annam coast ports	46,071	.....	189,316	.....	36,947
Philippine Islands	1,072,392	874,621	874,439	839,613	429,755
Singapore	421,879	683,267	606,306	269,451	30,035
Java	.....	91,138	.....	.....	.....
Australia	.....	.....	24,752	.....	66
Mauritius and Réunion	.....	.....	1,198,008	377,672	1,047
Europe	594,911	270,356	.....	.....	.....
Victoria	.....	16,840	.....	.....	.....
Costa Rica	7,887	.....	.....	.....	.....
Total in piculs	8,712,121	4,737,114	8,505,630	7,894,767	7,973,928
Total in tons	518,580	281,971	506,287	469,927	474,638

*1 picul=133⅓ pounds.

Exports from Rangoon of rice, paddy, and meal to the Straits Settlements, China, and Japan.

Year.	White rice.	White and cargo broken rice.	Meal.	Cargo rice and paddy.	White and cargo rice to Japan.	Paddy.	Total.
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*
1895	234,898	11,021	38,'c9	1,349	5,170	30	290,571
1894	203,929	10,717	26,012	2,484	10,182	1,513	254,837
1893	122,758	5,732	12,258	2,873	.....	1,895	145,516
1892	128,837	7,008	17,724	367	.....	55	153,991
1891	179,143	7,697	25,986	208	5,109	.....	218,143
1890	241,769	11,161	46,985	3,660	48,586	.....	352,163
1889	166,222	3,227	33,579	2,217	.....	.....	205,244
1888	177,508	757	32,353	771	.....	16	151,405
1837	163,289	4,668	37,139	3,347	.....	160	208,603
1886	185,118	5,311	39,775	6,546	.....	3	236,753
1885	126,360	2,937	27,921	2,625	.....	316	106,150

Imports of rice into Singapore during the last three years.

Whence imported.	1893.	1894.	1895.
	Piculs.	*Piculs*	*Piculs.*
Siam	2,993,659	2,737,664	2,416,973
Burmah	806,244	1,702,876	2,011,321
Saigon	1,228,766	922,107	578,603
India	30,903	8,141	31,085
China	41,768	27,620	17,411
Java	.....	15,164	89,841
Other places	45,647	42,332	90,995
Total	5,146,987	5,455,904	5,236,228
Total in tons	306,368	324,756	311,680

E. SPENCER PRATT,

SINGAPORE, *April 25, 1896.* *Consul-General.*

POTATO STARCH IN GERMANY.

In reply to Department dispatch regarding the process of manufacturing potato starch in Germany, I have the honor to submit the following, viz:

I have written to the principal manufacturers of potato starch in Germany, requesting them to describe the process of manufacture to me, but in vain. They all inform me it is a secret of their own and do not wish to disclose it. Inclosed are two letters explaining the foregoing.

The only information I was able to gain on its process I have taken from a book called Fabrication of Potato Starch, Dextrin, and Starch Sugar, from which the following is a translation of an article contained therein, headed "Fabrication of starch from potatoes:"

There are two principal methods for the production of starch from bulbs in general. The one method, which finds almost general application and is

designated under the name of the "ancient" method, consists in reducing the bulbs on grater cylinders and such apparatus, if possible, completely, or rubbing them to a fine pulp, washing or brushing them on sieves by means of a flow of water, and then separating the starch flour from the milky fluid running therefrom. The starch flour obtained in this simple manner is then cleaned either by washing or by a centrifugal machine, dried in a drying room with a heightened temperature, and the mass is then pressed between rollers.

The second method—Volker's method—consists, above all, in the cells of the bulbs being chemically opened. For this purpose, the potatoes are cut in slices, steeped some time in lukewarm water, then stored up in heaps several feet high and left to themselves about eight days, whereby the temperature mounts to about 40° Celsius. Through the heat developed by the rotting of the potato mass, chemical changes take place in the cells of the bulbs, which have not been studied exactly until now, but which certainly tend to form substances which not only dissolve the intercellular substance of the starchy web, but also have influence on the cell walls and partially dissolve them, so that the cells are opened in this manner, and, as it has been proved, much more completely than by the former-described method. Organic acidities are probably principally formed hereby, which dissolve the intercellular substance composed of pectine corpuscles. But whatever chemical workings the dissolving of the cellular walls produce has been a complete enigma. The process of thus obtaining starch has not been studied properly. The rotting having now advanced sufficiently and the fibers having so far lost their connection that the potato substance is changed into a soft dough-like mass, a complete separation of the starch flour can easily be accomplished in a mechanical way. To attain this, the mass, which contains starch-flour fiber stuff and peel in a pappy-like mixture, is steeped in water and passed through a sieve with large holes, whereby the coarser parts remain behind. The separating of the coarser parts takes place, then, by means of hair or wire sieves, of which the meshes are so fine that only the starch flour and very fine fiber parts pass through. The separating of the starch grains from the fiber parts is then ultimately obtained by means of highly ingeniously constructed clay apparatus.

F. W. KICKBUSCH,

STETTIN, *October 22, 1896.* *Consul.*

[Translation.]

Mr. F. W. KICKBUSCH,

United States Consul, Stettin.

DEAR SIR: In answering yours of the 18th instant, we regret very much not being able to meet your wishes, as our works and process of manufacture are looked upon by us as business secrets.

Respectfully,

H. WERR,

Director, Staerkfabrik Bentschen.

[Translation.]

Mr. F. W. KICKBUSCH,

United States Consul, Stettin.

DEAR SIR: We are now in a position to give our attention to your valuable favor of August 16, 1896. The directors, after due consideration, have decided not to deliver you the desired information regarding the process of potato starch.

They would refer you, however, to Herrn Ingenieur W. Engele, Berlin, W. Bulow street No. 41, who would give you any information wanted upon starch manufacture.

Yours truly,

H. SEIBT,

Die Direction, Kartoffelmehl and Syrup Fabrik Alt Damm.

HIGHER DUTY ON GLUCOSE IN AUSTRIA-HUNGARY.*

Active measures are in progress, during the present session of the Austrian Reichsrath, to increase the import duty on glucose, so that it will be impossible, if the duty is raised, to import glucose into Austria-Hungary. This movement is directed solely against glucose manufacturers in the United States. Owing to the fall in prices this year in the home corn market, it has been easy for American glucose manufacturers to export to this country at good profit. Within the past five months—June to October—there have been sent to Austria-Hungary from the United States 4,000 barrels of 300 kilograms (660 pounds) each, or a total of 2,640,000 pounds. The present duty is 6 florins (about $2.99) in gold per 100 kilograms (220 pounds) gross, or about 7 florins ($3.37) per 100 kilograms net. It is the purpose of the Austrian glucose manufacturers to have this duty raised to 18 florins per 100 kilograms net and effectually bar out the better and cheaper article from the United States.

CARL BAILEY HURST,

PRAGUE, *October 16, 1896.* *Consul.*

DENTISTRY IN FOREIGN COUNTRIES.

Application having been made to the Department of State for information as to the conditions governing the practice of dentistry in the various countries of Europe, and in the Hawaiian Islands especially, and the qualifications necessary for an American dentist, the diplomatic officers at the European capitals and the minister at Honolulu were requested to obtain the desired data. Their answers, in substance, are printed here for the general information of the dental profession of the United States. A note from the Mexican minister at Washington, in response to an inquiry from another source, as to the conditions in Mexico, is included in the series.

*See report from Consul-General Judd on American Glucose in Austria, p. 627.

AUSTRIA-HUNGARY.

Replying to dispatch of June 30 last, asking for information in regard to foreign dentists practicing their profession in this country, I beg to reply that foreign dentists are practically excluded from practicing in Austria; the same general law which governs the practice of medicine applies to dentistry. Every medical doctor or dentist must have passed the regular examinations of the various Austrian State preparatory schools, university, and medical college; no foreign diplomas of any kind are accepted as evidence of fitness in either profession. By this law any regular graduate of medicine may, if he prefers, practice dentistry without any further examination in that special branch of the profession. As far as I am able to learn, there is only one so-called American dentist practicing his profession in this country and he received a special permit to do so from the Emperor, after having renounced his American citizenship and become a naturalized citizen of Austria. This special imperial permission allowed him to employ two assistants, without regard to their nationality.

LAWRENCE TOWNSEND,

VIENNA, *July 29, 1896.* *Secretary of Legation.*

BELGIUM.

Foreign dentists are admitted to practice their profession in Belgium, provided they comply with the conditions prescribed in a royal decree of January 6, 1885.

All candidates, foreign or native, are required to pass an examination prescribed by the medical commission of the province in which they have resided during the two years that all such candidates must practice in the office of a regularly licensed dentist. This examination is announced in the Moniteur Belge a month before it is held. All candidates presenting themselves for this examination must be provided with a certificate showing that they have performed the preliminary two years' practice above mentioned. However, the Minister of the Interior and of Public Instruction may excuse from the production of this certificate any foreign candidate who has acquired the right to practice his profession in his own country.

JAS. S. EWING,

BRUSSELS, *August 25, 1896.* *Minister.*

DENMARK.

I have met with much difficulty in obtaining the information desired as to practice of dentistry in Denmark by foreigners, for the reason that the ordinances and regulations are contained in several pamphlets, which are out of print and not on sale. But at length I have found copies and obtained leave to have them translated.

The general result is that dentists can not practice in Denmark without a license, and such license can not be obtained without passing an examination and a certain amount of service as assistant; and the applicant is not entitled to such examination without certain educational certificates and proofs of good character.

JOHN E. RISLEY,

COPENHAGEN, *September 11, 1896.* *Minister.*

GENERAL RULES.

(1) Every licensed surgeon is allowed to practice as a dentist.

(2) Any person is allowed to set in teeth, but not to call himself a dentist.

(3) A doctor (dentalis chirurgia) from Philadelphia, tried, some years ago, to get permission to practice as a dentist, but was required to first pass the examination.

(4) There is a doctor from Norway, Dr. Olin, with dentist examination from Norway, but he is only permitted to set in teeth.

(5) The dentists' union has petitioned to forbid doctors and also surgeons to set in teeth, but it has not as yet been acted on.

(6) It is an established rule that everyone must attend the school two years and pass the examination.

(7) In former times, some foreign dentists were allowed to practice, but it was before the law was enacted.

(8) In order to serve as assistant, the examination must have been passed pursuant to the ordinance of August 9, 1890.

(9) To section 3 in the regulations for the school and examination of dentists is to be added: To be admitted as a scholar to the school, the person in question must furnish proof that he has worked one year in practice with one or more dentists.

FRANCE.

In reply to Department instruction of June 30, asking under what conditions foreign dentists are admitted to practice their profession in France, and whether the conditions prescribe an examination or not, I have the honor to furnish the following information:

According to article 2 of the law of November 30, 1892, no one can exercise the profession of dentist in France if he is not provided with a French diploma of doctor of medicine or of surgeon dentist, issued by a superior medical institution of the State, after a certain course of studies fixed by the Government and followed by public examination.

HENRY VIGNAUD,

PARIS, *July 16, 1896.* *Secretary of Embassy.*

GERMANY.

On the receipt of the instruction of June 30 last, I addressed a note to the imperial Foreign Office requesting, as directed, to be furnished with information as to the conditions under which foreign dentists are admitted to

practice their profession in Germany. A reply to this note has now been received and I have the honor to transmit herewith a copy, with translation, of the same.

EDWIN F. UHL,
Ambassador.

BERLIN, *October 2, 1896.*

[Translation].

FOREIGN OFFICE,
Berlin, October 1, 1896.

Referring to the communication of July 18 last (F. O. No. 69), the undersigned has the honor to inform his excellency the ambassador extraordinary and plenipotentiary of the United States of America, Mr. Edwin F. Uhl, that no official permit is necessary for practicing dentistry in Germany. Those persons, however, who wish to use the title of "doctor of dentistry" or another title of equal value, require, according to section 29 of the trade regulation (as adopted July 1, 1883, imperial law sheet, p. 177ff), a permit (approbation), which, with certain exceptions prescribed by the chancellor of the (North German) union in his proclamation of December 9, 1869 (law sheet, p. 687), can only be granted after passing an examination according to the regulations contained in the publication of the imperial chancellor of July 5, 1889 (central sheet for the German Empire, p. 417).

The regulations referred to, as well as another publication referring to this subject (central sheet for the German Empire, 1890, p. 81), are herewith inclosed.

While the undersigned permits himself to add that Duncker & Humblot, of Leipsic, have published a compilation prepared by Rechnungsrath Liebau, which contains explanations taken from official sources in regard to the regulations on the examination of doctors, dentists, etc., entitled Medical Examination System in the German Empire, he avails himself of this occasion to renew to his excellency the ambassador the assurance of his most distinguished consideration.

HOLSTEIN.

GREECE.

In accordance with the instruction of the 30th ultimo, I have the honor to inclose herewith a statement of the conditions under which foreign dentists are admitted to practice in Greece. As soon as possible, I shall forward the regulations on the subject in force in Roumania and Servia.

All persons desiring to obtain permission to practice dentistry in Greece must submit an official certificate from a recognized dental school or from a recognized dentist, certifying that they have been instructed and are proficient in dentistry.

Their examination shall be conducted either in the Greek language or in a foreign language. The subjects of examination are: (1) Anatomy of the mouth and of the jaw bones, (2) physiology of the teeth, (3) pathology and therapeutics of the teeth, (4) operations on the teeth, and (5) mechanical dentistry. The examination fee is 20 drachmas (about $2.30) and the fee for a certificate of permission to practice is 10 drachmas (about $1.15).

Foreign diplomas are authenticated on payment of 400 drachmas (about $46) for the stamped paper required. Without previous authentication of their diplomas, applicants from foreign countries are not allowed to present themselves for examination. It will be seen from the foregoing that all

applicants, whether Greeks or foreigners, are required to pass an examination before permission to practice is granted, the only distinction made between Greeks and foreigners being that the diplomas of foreigners must first be verified.

E. ALEXANDER,
Minister.

ATHENS, *July 23, 1896.*

HAWAIIAN ISLANDS.

In reply to the instruction of June 30, relative to the conditions under which foreign dentists are permitted to practice their profession in the Hawaiian Islands, I have the honor to inclose herewith a copy of chapter 72 of the session laws of 1892, which will furnish the desired information.

ELLIS MILLS,
Chargé d'affaires ad interim.

HONOLULU, *August 6, 1896.*

AN ACT TO REGULATE THE PRACTICE OF DENTISTRY IN THE HAWAIIAN KINGDOM.

SECTION 1. From and after the passage of this act it shall be unlawful for any person or persons to practice dentistry in the Hawaiian Kingdom except upon a certificate issued from a board of dental directors.

SEC. 2. The board of dental directors shall consist of three members, namely, one physician and two dentists, who shall be appointed by the Minister of the Interior, and whose first term of office shall be for one, two, and three years, and thereafter shall hold office for three years, the said board to act without compensation.

SEC. 3. It shall be the duty of the board of dental examiners to issue certificates of qualification to any person or persons at present engaged in the practice of dentistry who, within sixty days from the passage of this act, shall file an application before said board under oath and sworn to before two reputable citizens, setting forth the fact that he has been engaged in the active practice of dentistry in the Hawaiian Kingdom for two years or more previous to the passage of this act.

SEC. 4. It shall be the duty of the said board to issue certificates of qualification to any person or persons at present practicing in the Hawaiian Kingdom who shall file an application in writing within sixty days from the passage of this act and pass a creditable examination before the board upon dental medicine and surgery.

SEC. 5. It shall be the duty of the board to issue certificates of qualification to any person or persons at present practicing in the Hawaiian Kingdom who shall present within sixty days from the passage of this act a diploma from a reputable dental college.

SEC. 6. From and after sixty days subsequent to the passage of this act, the said board shall issue a certificate of qualification to any person who shall present a diploma from a reputable dental college or who shall pass a creditable examination before the board.

SEC. 7. Any person or persons receiving certificates from said board shall present said certificates to the Minister of the Interior, who shall record the same in a book kept for such purpose.

SEC. 8. Any person or persons who shall violate the provisions of this act shall, upon conviction thereof, be liable to a penalty of not less than $100 nor more than $500; provided, that nothing in this act shall be construed so as to prevent the extraction of teeth under circumstances of necessity.

SEC. 9. This act shall take effect from and after the date of its approval.

Approved this 19th day of December, 1892.

ITALY.

I have the honor to refer to the Department instruction of June 30 last, on the subject of the admission to practice in Italy of foreign dentists, and to inclose accordingly herewith the copy and translation of a note which has been received to-day from the Foreign Office in reply to inquiries in the matter, together with the pamphlet referred to therein.

I beg to add that as there is no regular school of dentistry in Italy some little informality in practice has existed, at least locally in Rome, in permitting foreigners to follow their profession, and on presentation before the proper officials of satisfactory credentials the applicants have been told they might practice among the people of their own nationality. But lately there has been begun an agitation against the granting of even that limited privilege and for the strict enforcement of the laws, information concerning which is contained in the before-mentioned note from the Foreign Office.

LARZ ANDERSON,
Secretary of Embassy.

ROME, *August 4, 1896.*

[Translation.]

MINISTRY OF FOREIGN AFFAIRS,
August 3, 1896.

In reply to the note of the 16th of July from the embassy, I beg to say that in virtue of the royal decree of the 24th of April, 1890, No. 6850 (third series), such as desire to practice odontology in the Kingdom of Italy must take degrees for physic and surgery, with the exception, of course, of such rights as were acquired before the promulgation of the said decree and of the law of the 22d of December, 1888, on the preservation of hygiene and of public health, according to article 60 of the sanitary regulations of October 9, 1889.

In consideration of this, foreign dentists, too, in order to practice in Italy, must be furnished with the diploma for physic and surgery, and, according to article 33 of the above-mentioned law, must have complied with the provision of article 140 of the law of the 13th of November, 1859, with regard to public education, and which reads as follows:

"Examinations passed and degrees obtained outside the Kingdom will have no effect in the State, except by some special law. Nevertheless, those who shall have obtained degrees in any of the Italian universities or in some foreign university of greater importance and shall prove to have really undergone the studies and examinations required for similar degrees in the universities of the State, will be freed from the condition of passing the special examination and will be admitted, without further difficulty, to the general examination for the degrees which they care to take."

I send to the embassy, as further information, the text of the sanitary law of the 22d of December, 1888,* regretting not to be able to provide also that of the general sanitary rules under date of the 2d of October, 1889, and of the royal decree of the 24th of April, 1890.

MEXICO.

Under date of June 3, 1896, Mr. Romero, minister from Mexico to the United States, writes to the Secretary of State:

In reply to your letter of the 1st instant, I have the honor to state that

*Filed in the Department of State.

in order to practice the profession of dentistry in Mexico, it is not necessary to previously undergo an examination, it being sufficient to have the proper diploma issued by a foreign dental college and the certificate duly authenticated by the competent authority in consideration of which that college has the legal power to issue such diplomas. Neither do the Mexican laws require the interested party to pass an examination in the Spanish language.

This has been the practice followed, but in case there may recently have been made some change of which I am ignorant, I will address the Government of Mexico on this point, and, if so, I will have the honor to inform you.

NETHERLANDS.

Referring to Department instruction, dated June 30, 1896, relating to dentistry in the Netherlands, I have the honor to inclose herewith a copy of the laws of December 25, 1878, and of March 26, 1895, relating to the subject.*

Articles 8 and 9 of the first-mentioned law, a translation of which is annexed, prescribe the examinations to which persons desiring to practice as dentists in the Netherlands shall submit, and articles 3 and 5 of the latter law, a translation of which is also attached, specify the foreign certificates or diplomas which permit a candidate to appear before the Netherlands examining committee for examination. The foreign certificates or diplomas thus recognized are the Belgian, German, British, French, Austrian, and Swiss medical diplomas, and the Belgian, German, British, French, and Swiss dental diplomas, in addition to those issued in the Dutch Indies, Surinam, and Curaçao.

WILLIAM E. QUINBY,

THE HAGUE, *September 2, 1896.* *Minister.*

[Translation.]

ARTICLE 8. The title of dentist permits of practice in dentistry, under which is included the treatment of local disease of the teeth, the jaws, and the gums. The title is obtained by passing a practical examination, in which satisfactory evidence shall be required of practical knowledge of operative dentistry and of the setting of artificial teeth and sets of teeth.

ART. 9. They alone shall be admitted to the practical examination for dentist who have passed the theoretical examination in dentistry.

ART. 10. Before submitting to the examination a sum of 25 florins ($10) shall be paid to the president of the council conducting the examination. (The last clause but one of article 7 provides that in case of failure a second trial may be made without a new payment.)

[Translation.]

ARTICLE 3. They who, after examination, have obtained the right to practice medicine in Belgium, Germany, Great Britain and Ireland, France, Austria, Switzerland, Netherlands India, Surinam, or Curaçao, may be admitted to the practical examination for dentist described

*Filed in Department of State.

in article 8 of the law of December 25, 1878 (Official Gazette, No. 222), on producing one or both of the certificates or diplomas mentioned in articles 1 and 2.

ART. 5. They who, after examination, have obtained the right to practice dentistry in Belgium, Germany, Great Britain and Ireland, France, Switzerland, or Curaçao may be admitted to the theoretical examination in dentistry mentioned in article 9 of the law of December 25, 1878 (Official Gazette, No. 222), on producing one of the certificates or diplomas hereafter mentioned.

PORTUGAL.

I have the honor to acknowledge the receipt of instruction dated June 30 last, addressed to Mr. Wilbor, in charge, and in reply have to state that an examination in the Portuguese language before the lyceum is imperative for all persons who desire to practice medicine or surgery in any of its branches in the Kingdom.

This examination is duly certified to. The candidate is closely examined before the school of medicine, in the Portuguese language; in the case of dentists, in the anatomy of the head. Both of these examinations are rigorous. Once successfully passed, the candidate, upon the payment of about $60, is entitled to practice.

I inclose herein a digest of the medical law of July 13, 1870, still in force, bearing upon this subject.

GEO. WM. CARUTH,

LISBON, *August 12, 1896.* *Minister.*

DIGEST OF THE PORTUGUESE LAW OF JULY 13, 1870, RELATING TO THE ADMISSION OF A DENTIST TO EXAMINATION FOR A DIPLOMA.

The examinations may take place at the University of Coimbra or at the schools of medicine and surgery in Lisbon, Oporto, or Funchal, Madeira.

Applications to the above institutions must be accompanied by the following certificates: (1) That the applicant is of full age; (2) that he does not suffer from any contagious disease or any other that may prevent his exercising his profession, and that he has been vaccinated or had the smallpox; (3) a certificate of examination and approval in Portuguese, and in the translations, at least, of the French or English language, issued at any of the national schools.

Foreign candidates must produce good-conduct certificates, authenticated by the respective consuls, from the authorities of the place where they have resided for the last two years.

Foreign candidates are also required to produce certificates of examination in French or English, issued by the public institutions of this country (Portugal), when they can not produce legal evidence of such literary qualification—or a superior one—from some school which, though not of this Kingdom, is legally competent and empowered.

Both Portuguese and foreign candidates must, with their applications, send in a certificate that they have not been rejected within the last six months by the medical faculty nor by the schools of medicine and surgery of Lisbon or Oporto in any part of their examination.

The examinations are public, and relate to anatomy, pathology, surgery, and dental prosthesis.

A candidate who has been rejected at the first examination can not undergo a second examination within six months.

Candidates are allowed to be examined in French or Spanish who can not undergo it in Portuguese.

RUSSIA.

Referring to the instruction of June 30, I have the honor to transmit herewith copy and translation of Mr. Chichkine's note of September 11–23, and his accompanying inclosure of the law and regulations relating to the practice of dentistry within the Empire for Russians and foreigners.

CLIFTON R. BRECKINRIDGE,
Minister.

ST. PETERSBURG, *September 25, 1896.*

[Translation of Mr. Chichkine's note.]

IMPERIAL MINISTRY OF FOREIGN AFFAIRS,
DEPARTMENT OF INTERIOR RELATIONS,
St. Petersburg, September 11–23, 1896.

Mr. MINISTER: In reply to the note of June 29 (July 1) last, I have the honor to transmit herewith an extract of the laws of the Empire containing the necessary prescriptions for Russian or foreign dentists who desire to acquire the right to practice in Russia.

I avail myself, etc.,

CHICHKINE.

Mr. CLIFTON R. BRECKINRIDGE,
Etc., etc., etc.

[Translation.]

ARTICLE 93. No person, either Russian or foreign, who does not possess a diploma or certificate from the universities and Military Medical Academy is allowed to practice any branch of medicine or to practice as a veterinary in Russia.

ART. 580. Persons desiring to obtain the degrees and titles of doctor, apothecary, or veterinarian, as well as to enjoy the rights granted to the same, must submit themselves to an examination. Examinations take place at all the higher medical institutions, which are authorized for this purpose by the Government.

ART. 586. The degrees of learning and title which can be acquired by examination are: Medical—(1) learned doctor, (2) official doctor, (3) specialist (including the name of the speciality), (*a*) surgical dentists, (*b*) dentists.

Supplement to section 103 (remark 1).—For preparing persons desiring to receive the title of surgical dentists, schools for medical dentistry are founded in conformity with the existing statutes of such schools, established by the medical council and recognized by the Minister of Internal Affairs, by mutual agreement between the Ministers of Public Instruction and of War.

ART. 103. Persons who have finished the classes of a medical-dentistry school and have received a diploma of surgical dentist have the right to practice dentistry medically in all its branches, according to general rules established for this purpose.

Supplement to article 596, section third.—(Section 32.) Persons desiring the title of surgical dentist must have finished with success the studies at the medical-dentistry school and must undergo an examination by the examining committee of the university or Military Medical Academy.

Section 31. Persons desiring the title of dentist, must present (1) a certificate, attested to by the local medical board, to the effect that the petitioners have studied dentistry for a period of three years with some well-known dentist, and that they have performed various dental operations on living beings with the proper skill and knowledge; (2) they must undergo an examination on the formation of the human skull, teeth, and gums, on the diseases the same

are liable to, and on the means of curing by local means, being such as dentists are authorized to employ; (3) they must also undergo practical examinations at the hospitals, and perform several dental operations on dead bodies and living beings.

ART. 590. The persons to be examined must state in their petition the degree or title for which they desire to be examined, and must present, at the same time, certificates (1) of their birth and faith; (2) of their good character; (3) that they have passed through the classes of science relating to the degree or title they request; and (4) foreigners, besides the above-named certificates, must present their permit of residence in Russia.

Section 104. Women may receive the title of dentist or surgical dentist under the same general regulations.

SPAIN.

Under date of September 28, 1896, the Spanish minister at Washington replies to an inquiry from the Department of State as follows:

In reply to your esteemed favor of the 26th of June, inquiring under what conditions American dentists are admitted to practice their profession in Spain, I take pleasure in inclosing a copy of the decree regulating the matter, which was recently forwarded to me from the proper department at Madrid.

You will no doubt notice that the contents of said decree refer chiefly to the medical profession, but dentists are admitted to practice under the same conditions as medical doctors.

The decree in question, dated February 6, 1869, provides that foreigners may enter the universities and other educational institutions of Spain on the same terms with Spaniards upon submitting to the rules in force. Persons who may have obtained academical degrees abroad may be admitted to the same examinations as those to which Spaniards are subjected, provided the authenticity of the degrees is established. The fees are the same as those paid by Spaniards. After having received a Spanish degree, foreign physicians must submit to the regulations decreed for Spanish physicians. Article 6 says: "To practice the medical profession, it shall suffice to present the degree acquired in a foreign public institution and to pay 200 escudos on obtaining the authorization, which shall be given on receipt of the certified degrees." Article 8 provides that the foreign degree must be one that is recognized as valid in Spain. Application must be made on stamped paper, addressed to His Excellency the Minister of Public Works, accompanied by the original degree and a translation of it into Spanish made by the interpreter at the Department of Foreign Affairs.

SWEDEN.

I have, after considerable delay, been able to secure a compilation of the laws in reference to the practice of dentistry in Sweden, which I forward under separate cover.* The surgeon-general informs me that Swedish citizenship is required for everyone wishing to practice a profession in Sweden, but there is nothing to prevent surgeon dentists wishing to practice under the rules imposed upon Swedish dentists, addressing a supplication to the King

*Filed in Department of State.

stating their intention of becoming Swedish citizens. Applications must always be accompanied by certificates and the applicants must pass the regular examination.

The surgeon-general informs me that there have been many such applications presented, but he could not recall a single instance of permission having been granted.

There has been, as yet, no compilation of the laws relating to dentistry in Norway, but I understand that one is in the course of preparation, and if I can secure a copy, will forward it later.

T. B. FERGUSON,

STOCKHOLM, *October 1, 1896.* *Minister.*

SWITZERLAND.

I have the honor to acknowledge the receipt of the instruction of June 30, 1896, asking under what conditions foreign dentists are admitted to practice their profession in Switzerland and whether these conditions require an examination or not. In answer to this inquiry, I have the honor to inclose herewith a copy, in the German language, of a paragraph of a communication recently received at this legation from Prof. Dr. Courvoisier, president of the Federal Medical Commission of Switzerland. I also transmit to the Department by separate mail five small pamphlets of printed matter, one in the German, the others in the French language, which, I am advised, embrace all the regulations now in force in Switzerland applicable to the practice of dentistry by foreigners.* From these and other sources I understand (1) that no foreign diploma is recognized in Switzerland; (2) that all foreigners desiring to practice dentistry must submit to a thorough practical examination and to the maturitats examination; (3) that all examinations must be conducted in the French, German, or Italian language.

The practical effect of these regulations is the exclusion of all, or nearly all, American dentists, as a residence of several years in Switzerland or a regular course in one of their universities would be necessary to qualify them to successfully pass an examination. In answer to the remonstrance raised by American dentists here against these regulations, the response is made that identically the same requirements are exacted of native practitioners.

JOHN L. PEAK,

BERNE, *August 6, 1896.* *Minister.*

UNITED KINGDOM.

Referring to the instruction of the 30th of June last, in relation to the conditions under which foreign dentists are admitted to practice in Great Britain, I have the honor to inclose herewith a copy of a note addressed by Mr. Bayard to Lord Salisbury on the 15th ultimo, together with a copy of His Lordship's reply of the 1st instant on this subject.

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*Filed in Department of State.

It appears from the contents of Lord Salisbury's note that, under the provisions of sections 8, 9, and 10 of the dentists' act of 1878, the duty of deciding whether the certificate of a foreign or colonial dentist entitles the holder to practice dentistry in his own state (or colony) and whether such certificate furnishes "sufficient guaranty of the possession of the requisite knowledge and skill for the efficient practice of dentistry or dental surgery" rests with the General Medical Council of Great Britain.

As a result of an inquiry, held in 1879, into the sufficiency of the degree granted by the various American dental licensing bodies who applied for recognition, Harvard University and the University of Michigan were alone recognized as bodies granting "qualifications" which entitled the holders to registration in the United Kingdom, and no other application was granted.

Upon a further investigation, however, in 1893, it was found "that the curricula of these two bodies were not considered adequate to insure the possession of the necessary qualifications," and it was resolved by the council to suspend the recognition of the dental degrees of the two universities referred to until further notice.

As the result of this action, no foreign dental degrees are apparently at present recognized in Great Britain.

I have the honor to inclose herewith copies of the dentists' act of 1878 and of the medical acts from 1858 to 1886; also, the other documents mentioned above.*

JAMES R. ROOSEVELT,
Secretary of Embassy.

LONDON, *August 5, 1896.*

MR. BAYARD TO THE MARQUIS OF SALISBURY.

EMBASSY OF THE UNITED STATES,
London, July 15, 1896.

MY LORD: Referring to Your Lordship's note of the 23d of July, 1889, relating to the condition under which foreign dentists are admitted to practice in the United Kingdom, I have the honor to inform Your Lordship that I am instructed by my Government to ask whether the regulations referred to prescribe an examination or not, and if they have been in any way changed or added to since the date of the above-mentioned note.

I shall also be extremely obliged to Your Lordship if additional copies of all laws and regulations upon the subject can be kindly furnished me, for the use of my Government.

I have, etc.,

T. F. BAYARD.

The Most Honorable The MARQUIS OF SALISBURY, K. G.,
Etc., etc., etc.

LORD SALISBURY TO MR. BAYARD.

FOREIGN OFFICE,
August 1, 1896.

SIR: With reference to Mr. Bayard's note of the 15th ultimo, making further inquiries as to the conditions under which foreign dentists are admitted to practice in the United Kingdom, I have the honor to state that the lord president of the council has been informed by

* Filed in Department of State.

the president of the General Medical Council, to whom the matter, being of a technical nature was referred, that the provisions of sections 8, 9, and 10 of the dentists' act, 1878, which governs the registration of foreign (and colonial) dentists with recognized certificates, imposes on the General Medical Council the duty of deciding whether the certificate entitles the holder to practice dentistry in his own state (or colony) and whether such certificate furnishes "sufficient guaranty of the possession of the requisite knowledge and skill for the efficient practice of dentistry or dental surgery."

In accordance with this duty, the General Medical Council has decided to recognize only such certificates as are evidence of a course of study and examination in arts and in dental surgery not inferior to those of British dental practitioners.

As the result of an inquiry held by them in 1879 into the sufficiency of the degree granted by the various American dental licensing bodies who applied for recognition, the University of Harvard and the University of Michigan were recognized as bodies granting "qualifications" which entitled the holders to registration in the United Kingdom, and no other application was granted. But after investigation in 1893 by the education committee of the council, it was found that the curricula of these two bodies were not considered adequate to insure the possession of the necessary qualifications and the council thereupon resolved that the recognition of the dental degrees of the two universities above mentioned should be suspended until further notice. Consequently no foreign dental degrees are at present recognized.

I beg leave to inclose copies of the medical acts from 1858 to 1886 (including the dentists' act, 1878), of the report of the education committee referred to above, and a report of the same committee which will show the course of study and examination required for British dentists.

I have, etc., SALISBURY.

MANUFACTURE OF DYNAMITE.

On May 19, 1896, the consuls of the United States at Amsterdam, Bremen, Glasgow, Hamburg, Liverpool, and Southampton were instructed to report upon the manufacture of dynamite in their several districts and its export therefrom. The following are the answers to this instruction.

AMSTERDAM.

After careful investigation, I learn from reliable authority that dynamite is not manufactured in the Netherlands.—EDWARD DOWNES, *Consul, Amsterdam, September 19, 1896.*

BREMEN.

Dynamite is not manufactured in or shipped from this consular district. The only detonating certificates which have been issued for shipping purposes at this and outlying ports have been given for the shipment of gunpowder.

Gunpowder is never loaded on the vessels at the piers or in the docks. When it is loaded, the vessel receiving it must be no nearer land than the

stream of the river. The powder is put on board under the supervision and escort of the police.

I have not been able to get any facts concerning dynamite used by the marine.

GEO. KEENAN,

BREMEN, *June 27, 1896.* *Consul.*

GLASGOW.

During my absence on leave to the United States, Department instruction of May 19, 1896, was received at this office, asking for a report relative to the manufacture of dynamite. The vice-consul, William Gibson, esq., obtained all the information he could as to its manufacture here. I have been unable to add anything to the result of his inquiries.

There is only one company in this consular district (Glasgow) engaged in the manufacture of dynamite, and they absolutely refuse to give any information, stating to Mr. Gibson that the inquiry was evidently, in their opinion, in the interest of competing firms in the United States.

This company is the Nobels Explosive Company (W. Wainwright, secretary), 149 W. George street, Glasgow. Mr. Gibson ascertained from other sources that they ship dynamite principally to Australia and the Cape Colonies.

In Cornwall, the price of dynamite containing 75 per cent of nitroglycerin is £60 ($291.90) per ton of 2,000 pounds, and in the west of Scotland the price is £67 ($324.97) per ton of 2,000 pounds.

In shipping to the United States, the price might be higher. The charge is made usually according to the market price of the country to which it is consigned.

ALLEN B. MORSE,

GLASGOW, *July 22, 1896.* *Consul.*

HAMBURG.

Notwithstanding the most persistent effort to procure information upon which to base a report upon the manufacture of dynamite in Germany, as called for by the Department's instruction of May 19, 1896, I have been but fairly successful.

The instruction was received on the 8th of last June, and I at once proceeded to give it attention. During a visit to a leading member of the advisory board of one of the most important German companies forming the dynamite trust, Vice-Consul Burke endeavored to get such facts and figures as would serve at least as the basis of such a report as I hoped would prove valuable to the trade in the United States. But a few moments' conversation was needed to show the utter secrecy with which the entire operations of the dynamite trust were kept surrounded, and Mr. Burke was quietly informed that he might just as well give up his investigations. Absolutely no single item of practical information was elicited beyond the statement that his

efforts would be equally unsuccessful elsewhere. I thereupon applied to a gentleman in this city, who is a considerable shipper through this consulate and who furnishes the dynamite factories, to a large extent, with one of the most important ingredients which they employ. This gentleman volunteered the opinion that if anyone were able he would be to procure the information which I desired in regard to the manufacture of dynamite in Germany, its exports, the countries to which exported, the prices at which sold in the domestic market and in foreign markets, the cost of production, etc. After weeks of earnest endeavor to assist me in the direction indicated, he has finally confessed his entire inability to accomplish any results. Beyond a printed pamphlet or two, of no special interest or value in such a report, he has been unable to furnish me anything. At this juncture, I approached the Chamber of Commerce of this city in a personal way, hoping that perhaps some member of that body might be able to at least give some slight clew to a successful investigation. Here, again, I was met with the announcement that not only was there no one familiar with the question of dynamite, but that it was confidently believed that I would not succeed in securing the slightest enlightenment from anyone who was.

As a last resort, I applied to the dynamite people themselves, requesting them to give me exactly what I wanted, or, at least, as much of it as would not injuriously disclose their business secrets. I was most politely, but frankly, informed that they were unwilling to impart any of the desired information. They would give neither facts nor figures of apparently the most harmless character. About all I learned in reply to my questions, variously put and repeated, was the following:

In reply to my first question, as to the ruling prices in Germany for different qualities and grades of dynamite, I was informed that under no circumstances could they divulge such prices or qualities, but that the former, particularly as far as the German market was concerned, were very low, owing to the fact that two German factories—Dr. Nahusen's, at Dömitz, on the Elbe, and the one at Bielefeld—neither of which are members of the trust, were continually underselling the factories which constitute the dynamite trust. I may mention that the latter is composed of all the English dynamite factories, as well as those of Germany, with the exception of two or three. I was also advised that the increasing demands of industrial establishments and the constantly new inventions in the preparation of dynamite had been the cause of making the list of different grades and qualities a very long one.

My request for the names of the countries to which dynamite is exported from Germany and the amounts to each and the value of same was also met with a polite refusal, for the reason that it was not proposed to increase American competition, which already was very damaging in the silver-producing countries of Central and South America. I was also reminded of the fact that there are a great number of dynamite manufacturers in the United States, many of whom manufacture inferior articles to those made in

Germany, and who, owing to the closing of mines and the completion of railroads to which they had been selling their manufactures, are compelled to look for other markets, and that this was another good reason for withholding as much information as possible from the American manufacturers.

I will mention here that the only statistics of exports of dynamite from Hamburg which are obtainable simply give the quantities exported, their total values, and the average price per 100 kilograms (220.46 pounds) net. These figures for 1893, 1894, and 1895 are as follows:

Description.	1893.	1894.	1895.
Quantity.....pounds...	2,042,920	3,825,640	3,848,900
Value.....	$836,681.00	$1,104,282.00	$1,069,003.00
Average price.....per 220 pounds...	$68.56	$75.32	$61.10

I was further informed that, though the German duty on dynamite is only 71 cents per 100 kilograms (220.46 pounds), practically none is imported; but one instance was cited where a German manufacturer, in order to fill a contract he had entered into, was compelled to import a quantity of dynamite from England, which importation resulted disastrously, causing him a loss of about $15,000.

I finally learned that, with the exception of cotton and nitrate, all of the ingredients used in the manufacture of dynamite were easily procurable in Germany, France, and Austria.

Within the last few minutes, and after having written the above, I have had a lengthy conversation with a gentleman here who ships dynamite, among a great many other articles, to different parts of the world. He has explained to me that the different qualities of dynamite are based upon the percentage of the explosive substances in each, whether the base be infusorial earth or gelatin. The demands for these various qualities, either in Germany or in foreign countries depend upon the uses to which the explosive is to be put. I have learned that Germany exports dynamite to every important country of the world, except the United States, Mexico, and Canada, and that in the last two countries the United States controls the trade, while it is beginning to displace the German article in the various countries of South America. In the same way that German dynamite can not compete with ours in the United States, we can not compete with them here; nor can any other country. Hence, as before said, there are practically no imports of dynamite into Germany. In order that American manufacturers may determine as to their ability to compete in the dynamite markets of the various countries, it is necessary for them to ascertain the various prices in those countries for the special qualities of dynamite that are used in each; and these our consular representatives on the spot can, of course, more accurately report than this office.

I can only express the opinion, after as full an investigation as I have been able to make, that American dynamite can not gain a foothold in Ger-

many under existing circumstances, but I have been led to believe that it can be made to successfully compete with German dynamite in nearly all other countries of the world. I understand that the dynamite trust of Germany and England is now building, or will soon build, a large dynamite factory in Johannesberg, South Africa. This will, of course, give its products an advantage over foreign imports into that country.

I do not know what success my colleagues in England and Holland have met with in making their reports upon this same subject; but I would state that, as no official or other publications exist here covering any of the points upon which information would be specially desired by our manufacturers, it has been necessary for me to invoke the assistance of those who are familiar with the dynamite industry; and the results of my efforts in this direction are set forth above. I can not refrain, however, from venturing the opinion that this is but another of those frequently recurring instances in which our manufacturers at home who are interested in the development of such an important article of trade, would find it more profitable, and in every way far more satisfactory in the end, to send abroad their experts to study and report the conditions as they exist.

W. HENRY ROBERTSON,

HAMBURG, *September 24, 1896.* *Consul.*

LIVERPOOL.

In reply to Department instruction of May 19, 1896, I have to say that there is no dynamite manufactured in this district.—JAMES E. NEAL, *Consul, Liverpool, June 26, 1896.*

SOUTHAMPTON.

The manufacture of dynamite in this district and its exports therefrom are practically nil.—WARNER S. KINKEAD, *Consul, Southampton, August 6, 1896.*

GERMANY'S FOREIGN TRADE IN 1895.

The imperial German bureau of statistics in Berlin has just published, in the shape of a volume of 560 pages, the statistics of Germany's foreign trade in 1895, relative to quantity and value of the various commodities and the traffic with the several countries. During the last four years, the money value of the imports into and the exports from the Empire was as follows:

Year.	Imports.	Exports.
1895	$1,010,574,418	$814,930,088
1894	1,019,956,854	726,252,240
1893	983,988,660	772,205,756
1892	1,006,026,952	749,724,752

While the import in 1895 is nearly $10,000,000 less than that of the preceding year, the export of last year is larger than in 1894 by more than $88,000,000. These figures show the enormous growth of Germany's export industries.

The following table illustrates the trading, during the last two years, with various countries that have either sold to or bought from Germany upwards of 100,000,000 marks ($23,800,000):

Countries.	Imports.		Exports.	
	1895.	1894.	1895.	1894.
Great Britain	$137,650,156	$144,856,320	$161,395,178	$150,975,300
Russia	135,373,210	129,457,244	52,569,678	36,363,828
Austria-Hungary	125,052,340	138,456,262	103,712,308	105,593,414
United States	121,785,314	126,839,482	87,750,362	64,525,370
France	54,721,436	50,943,662	48,259,022	44,774,940
Belgium	42,648,172	40,837,464	37,886,268	35,673,344
Netherlands	39,110,778	47,404,602	58,341,654	58,076,046
British East Indies	38,586,464	39,062,940	10,629,318	9,322,222
Italy	34,734,196	33,661,768	19,843,250	19,627,680
Switzerland	34,394,808	32,422,264	52,128,902	44,824,206
Argentine Republic	44,848,006	24,737,720	8,918,812	7,191,884
Brazil	27,327,398	21,722,974	17,895,458	13,568,618
British Australia	27,056,078	23,264,938	5,442,822	4,839,492
Denmark	17,381,378	17,475,388	24,008,626	19,846,106

The export to all these countries shows an increase in 1895; in most cases, a very considerable one. The export to Great Britain which, so far as the value is concerned, had in 1894 gone back a little as compared with 1893, now exceeds the amount of 1893. The same is the case with the export to Austria-Hungary and the United States, while the export to France was still about $85,000 less than in 1893. The export to the Netherlands, Belgium, and Denmark is continually on the increase, as is also that to Switzerland, which, in 1895, exceeded that of 1894 by more than $7,000,000 and that of 1892 by nearly $12,000,000. The export to Denmark has, since 1892, grown by about $6,000,000, *i. e.*, more than 30 per cent. The export to Russia grows steadily from year to year ($9,000,000 more in 1895 than in 1893), although it has not again reached the figure of 1892, which had jumped up to nearly $59,000,000.*

Another interesting picture is presented by the import into Germany. There is, above all, a striking falling off of the imports from Great Britain to be noticed, viz, $7,200,000 against 1894 and more than $10,000,000 against 1892. Russia has, in consequence of the Russo-German treaty of commerce, gained a better footing in Germany again, and there is every prospect that she will soon take first place among Germany's import customers.

* For export figures in detail, see report of Commercial Agent Moore, which follows this.

The import from Austria-Hungary, which ranks third, has gone down considerably, not for the least part in consequence of the closure of the frontier against Austrian and Hungarian cattle.

LOUIS STERN,
Commercial Agent.

BAMBERG, *September 19, 1896.*

Commercial Agent Moore, of Weimar, transmitting, under date of September 24, 1896, a report based upon the same statistics, gives the following table of export values:

Exports.

To—	1895.	1894.	1893.	1892.
Great Britain	$161,403,000	$150,978,000	$160,244,000	$152,319,000
Austria-Hungary	104,311,000	95,603,000	100,096,000	88,640,000
United States	87,765,000	64,529,000	84,339,000	81,522,000
Netherlands	64,223,000	58,074,000	57,292,000	56,161,000
Russia	52,800,000	46,371,000	43,949,000	57,021,000
Switzerland	52,122,000	44,833,000	44,602,000	40,369,000
France	48,272,000	44,753,000	48,349,000	48,297,000
Belgium	27,896,000	35,672,000	35,247,000	33,502,000
Denmark	24,019,000	19,847,000	19,333,000	18,010,000
Italy	19,844,000	19,637,000	20,858,000	21,708,000
Sweden	18,238,000	17,349,000	16,808,000	16,084,000
Brazil	17,898,000	13,570,000	14,884,000	13,384,000
British India	10,635,000	9,322,000	12,244,000	7,689,000
Chile	10,598,000	5,377,000	6,748,000	10,761,000
Norway	10,089,000	9,610,000	9,260,000	9,005,000
Turkey	9,285,000	8,185,000	9,760,000	9,452,000
Argentine Republic	8,929,000	7,214,000	10,131,000	8,387,000
China	8,433,000	6,696,000	7,917,000	7,135,000
Roumania	8,105,000	8,695,000	10,388,000	9,390,000
Spain	7,419,000	7,282,000	7,863,000	9,259,000
Japan	6,209,900	4,069,000	4,425,000	4,077,000
Total	815,079,000	726,260,000	771,220,000	749,726,000

Mr. Moore adds:

The value of the total imports shows a decline of nearly $10,000,000. Among the countries whose exports to Germany have most fallen off in 1895, Austria-Hungary is, in the first place, to be noted, with a decrease of $13,500,000; Netherlands, $8,250,000; Great Britain, $7,000,000; the United States, $5,000,000; and, lastly, Roumania, the imports from which show a very striking decline, falling from $20,000,000 in 1893 to $14,000,000 in 1894 and $8,500,000 in 1895. Of transoceanic countries other than the United States, Chile and Venezuela show a decrease, while some South American countries, *i. e.*, Argentina and Brazil, show a noticeable increase. The imports from British Australia have greatly increased, but those from Dutch India still more, having more than doubled within two years. Of European countries, the imports from France show an increase of $4,000,000, Russia of $6,000,000, but the increase from the latter is small in comparison with that of 1893 to 1894, which, owing to the new commercial treaty, amounted to $45,000,000.

Germany's total exports show an increase of $89,000,000, of which all the principal countries get a share, except Roumania, where, again, a falling off is shown. The largest increase is in the exports to the United States, which amounted to $23,000,000 more than the previous year, thereby exceeding the totals of 1892 and 1893. Germany's exports to Great Britain were valued at $10,500,000 more than in 1894; Austria-Hungary, $8,000,000; Switzerland, $7,500,000; Russia, $6,000,000 more. Her shipments to France, which greatly declined in 1894, have risen again $3,500,000, nearly reaching the figures of former years. Her exports to Denmark show an increase of $4,000,000. The exports to transoceanic countries have increased all round, especially to some of the South American republics, *i. e.*, Chile, by $5,000,000 (after a decline during recent years); Brazil, $4,000,000; Argentina, $1,750,000; Mexico, $1,250,000. The Asiatic countries show likewise a general increase, especially Japan, with $2,250,000, and China, with $1,750,000. In Africa, the Transvaal shows the steadiest increase, Germany's exports to it, amounting, in 1892, to but $250,000; 1893, $750,000; 1894, $1,250,000; and 1895, $2,250,000.

The foregoing statement proves also that the export of the German Empire to the silver countries has not decreased, as was anticipated by the bimetallists, but, on the contrary, they have increased. They further provoke the consideration of the importance the possession of good colonies would be for Germany.

GERMANY'S EXPORTS FOR THE FIRST THREE QUARTERS OF 1896.

Germany rejoices over a good business for the first three quarters of 1896. Increased imports, especially of raw materials for manufactures, and increased exports, especially of manufactured articles, are the causes. While it is not always true that increased exports indicate financial prosperity, it is true when fair prices with fair profits are recorded. Such was the record, notwithstanding the fact that the prices obtained on articles exported were often very near the cost-of-production price. However, large sales to foreign parts relieve the home market, thereby helping to hold up home prices. The increased import of raw products for the first nine months of 1896 shows itself first of all in the increased import of waste (Abfaellen) products. These went up from 406,495 tons in 1895 to 564,687 tons in 1896. The import of scrap and waste irons shows a large increase. In the column marking the increase of manufactured articles, we find iron, iron wares, drugs, apothecary articles, colors, dyes, instruments, machines, linen yarns, and linen cloths. There was a notable falling off in the importations of cotton, woolen, flax, leather and leather goods, and silk and silk wares.

Most of the raw stuff used in the textile industries shows a decrease. This corresponds to the depression in the export of textiles, trade with the United States being before and beyond all others responsible. I may say

here that Germany looks longingly, at all times, toward ours, the largest and best market in the world for textiles. The rapid gain going on now for some years in other industries has not been so fast, so large, or so certain in the textile centers. Chemnitz shows a falling off in the first three quarters of 1896, as against the same period in 1895, of $1,774,961; it has gone down from $11,392,000 in 1890 to $4,275,347 in 1894 and $4,276,377 in 1895. The compiler of the statistics gets cold comfort out of the fact that in 1895, 5,160,067 tons of brown coal came in; the first three quarters of 1896 saw 5,659,023 tons brought over the frontiers. This is not strange when one thinks of the high railroad freight rates to be paid by German miners, while Bohemia sends hers along the Elbe from Bodenbach to Hamburg. The total imports for the first nine months of 1896 weighed 26,438,188 tons, against 23,463,201 tons in 1895. The value thereof, for 1896, was 3,361,000,000 marks ($785,400,000), against 3,121,000,000 marks ($742,798,000) for 1895. The exports in raw iron went up from 93,822 tons in 1895 to 111,511 tons in 1896. The export of iron rails keeps on increasing; it went up from 83,472 tons in 1895 to 92,902 tons in 1896, while the import of rails went down from 1,487 tons in 1895 to 108 tons in 1896, showing that the Empire supplies now its own demand. Almost the entire increase in exports is due to progress and prosperity in the metal industries.

Nothing so strikes a stranger visiting German cities as the outward evidences of mercantile and manufacturing development. Everywhere one sees new mills in course of construction. In this city and section it is simply enormous. Nothing like it has ever been seen before. Besides ironware of all kinds, the increase in exports is due to instruments and machines of all kinds, to copper, tin, and zinc wares.

Hand in hand with all this, goes an increased demand here for all kinds of cereals. The imports of wheat and rye went up, while the exports descended. The Empire is rapidly changing from an agricultural to an industrial state. It is no longer possible for it to produce agricultural supplies large enough to meet its own demands. It must buy abroad.

It lost heavily in exports of glassware, because of bad commercial treaties, also in many kinds of leather wares and silk and woolen articles. The total exports for the first nine months of 1896 amounted to 18,705,950 tons, against 17,110,095 tons for 1895. The values were: For 1896, 2,688,000,000 marks ($638,944,000); for 1895, 2,476,000,000 marks ($589,288,000). These values are based on 1895 prices. The amount for 1896 should be much more, for 1896 prices are considerably higher than those of 1895, but they are not yet in a condition to be used for statistical purposes.

Among the articles most certain to make their way here, if properly handled (after our raw products, many of which, such as cotton, corn, and petroleum, the Empire must buy), are wooden wares of all kinds—carriages, desks, furniture, etc. Roller-top desks (the Standard) sell in this city for 280 marks ($66); office chairs, of wood, for 71 to 102 marks ($17 to $24).

So, too, shoes should sell here in larger quantities at profitable prices. Typewriters, mimeographs—such as Edison's—saws, files, crackers, biscuits, wafers, etc., should also sell in large quantities at good prices. There is only one way, though, to sell, and that is by showing the goods. Germans who have anything to sell, send out agents to show the goods. They hire stores, halls, ships, wagons, whatever is necessary, and show. So America, Africa, Asia, and our own country are being covered as completely by this energetic, enterprising people as any part of Europe.

J. C. MONAGHAN,

CHEMNITZ, *November 7, 1896.* *Consul.*

AN ENGLISH VIEW OF GERMAN TRADE RIVALRY.

The falling off of England's commerce and industry has been occupying within the past months general attention in England and Germany; it has been dealt with by the press, in parliamentary blue books, pamphlets, and speeches. The English have had to listen to so many unfavorable things on this subject that they can not longer refuse to admit the truth, unpalatable as it may be. Statistics prove absolutely the assertions of the decline in England's commerce and industry, and Lord Rosebery, in his recent Epsom speech, has touched on all the complaints and assertions relative to the subject. He referred to consular reports and to the book, Made in Germany, by Ernest Edwin Williams, which has provoked so much discussion in England.

The label "Made in Germany" is the keynote of the whole discussion, and Mr. Williams has come to the conviction, already widespread in many English quarters, that the falling off of England's export trade is chiefly, if not solely, due to Germany's powerful competition in the world's markets. Germany is said to have conquered all ground lost by England and to be her strongest and most successful competitor. In the same way in which Germany conquered France by her superior warfare, she now supplants England by the arms of her industrial activity, her better technical and linguistic education.

It is known that by the merchandise marks act of England every article coming from Germany had to be stamped "Made in Germany" and it was thought to deal by this means a deadly blow to Germany's export trade and to those branches of German industry which, not many years ago, Professor Reuleaux qualified as "Billig und schlecht" (cheap and bad). The "made in Germany" was meant to be equivalent to "German rubbish" and prejudice the sale of German products in England; but in this, the English were doomed to general disappointment. The effect was contrary. The Germans themselves claim, at present, to be glad of the enactment of the merchandise marks act, declaring it has assisted them a great deal in their trade. It is true they at first feared great losses would result to them from the act and

the corresponding French law, but experience has proved that a better service could not have been rendered to German industry than by the continual advertisement they have enjoyed from "Made in Germany."

After the enactment of the law, it became known how many German articles formerly sailed under a foreign flag—foreign importers having given, up to that time, French and English marks to German goods—but as the foreign consumers continued to buy the same articles as hitherto, they discovered to be of German origin what they thought to be French and English goods. Thus they got true knowledge of what goods were really of German manufacture. The Hamburg export trade especially made great strides. Transoceanic importers who formerly went to London and ordered from the samples shown them there (which they generally thought to be English) now know the immediate sources and go to Germany to buy German goods and to France to buy French goods, the London sample rooms being to some extent done away with.

The consequences of all this are now such that the English realize the seriousness of the situation and begin to look about for remedies. The statements in Williams's book are held up as a mirror for his countrymen to enable them to see clearly their position; statements which have made him, nevertheless, many enemies and few friends.

Mr. Williams cites a few articles which, though branches of English industry, were introduced by Germany into England to a great extent in 1895, viz:

Articles.	Value of imports.	Articles.	Value of imports.
Linen shirting	$443,509	Books	$180,881
Cotton goods	2,604,249	Paper	2,852,030
Embroidery and needlework	54,961	Musical instruments	2,741,900
Leather gloves	*135,759	China and earthen ware	1,056,190
Woolen goods	4,941,162	Photographs, images, etc	544,589
Toys	2,235,308		

*Six times the amount of 1889.

The total imports from Germany into England rose from $80,988,035 in 1883 to $105,350,830 in 1893, an increase in ten years of 30.8 per cent.

Some figures show the industrial progress of Germany: Of raw iron, 2,147,000 tons were produced in 1878, against 5,788,000 tons in 1895, and 492,512 tons of steel in 1878, against 3,617,000 tons in 1894.

Germany exported in 1880, 1,301,000 tons of iron, and in 1894, 2,008,000 tons, while England's iron export decreased in this period.

Germany exported in 1883, 14,666 tons of cotton goods; in 1893, 33,350 tons, an increase of 127 per cent, while England's increase in this period was but 2½ per cent.

By the way, it may be mentioned that the total tonnage of all Hamburg ships exceeded that of Liverpool in 1893 for the first time; and that in 1894, Hamburg surpassed her record of the year before.

Germany gained an enormous market in the East by the Russian treaty, for she exported to Russia, in 1893, 50,588 tons of iron goods and machines, and in 1894, 156,800 tons, while the corresponding exports of Great Britain to Russia were, in 1893, 161,413 tons of iron goods and machines, and in 1894, 138,318 tons—a decided reduction.

The United States bought from Germany, in 1884, goods to the value of $41,823,000, and in 1894, to the value of $69,703,000, though prices were declining.

Germany's exports to Canada were, in 1894, ten times the amount of those in 1884, and her exports to South America rose from $3,861,000 in 1884 to $15,131,000 in 1894.

Japan imported from Germany, in 1869, goods to the value of $238,000, and in 1888, $4,288,000.

Australia imported from Germany in 1884 goods to the value of $1,503,000, and in 1893, $4,288,000. Four-fifths of all musical instruments imported there are "made in Germany."

English consular reports show a decrease in Englands's exports to the following countries:

Countries.	1894.	1895.
Russia	$5,292,900	$4,981,795
Norway	9,327,280	9,219,176
Holland	42,765,421	35,987,800
Belgium	32,271,047	36,096,432
Spain	19,199,182	17,809,580
Canary Islands	2,141,066	1,942,820
Italy	27,035,829	26,803,115
Greece	4,289,895	4,057,730
Bulgaria	1,048,605	767,890
Roumania	6,389,335	4,3[illegible]7,970
Turkey in Europe	15,040,585	12,100,765
Turkey in Asia	16,650,175	13,899,965
Egypt	19,446,950	16,288,120
West coast of Africa	1,112,330	261,990
Dutch Java	8,746,450	8,453,640
Philippine Islands and the Ladrones	3,115,150	2,030,695
Spanish India	5,445,480	4,409,025
French India	779,565	521,370
Ecuador	1,283,160	1,220,750
Brazil	36,609,930	35,505,540
Uruguay	7,212,165	6,576,640

In the few countries where an increase of English exports is visible, it does not keep pace with that of Germany. For instance, the imports into Mexico through the important port of Veracruz were:

From—	1893–94.	1894–95.	Increase.	
				Per cent.
England	$3,534,455	$4,681,533	$1,147,078	24
France	3,240,355	4,586,835	1,346,480	29
Germany	1,454,794	2,129,386	674,592	31
Italy	63,880	85,986	22,106	25

A very striking contrast is shown by the figures of England's total exports, which were, in 1872, $1,247,973,281, and in 1895, $1,101,443,780—this, too, in spite of the fact that the population of the United Kingdom increased from 31,835,757 in 1872 to 39,134,166 in 1895. While within these twenty-three years the population, productivity, consumption, and purchasing power of foreign lands has greatly increased, the English exports fell from $39.21 per capita in 1872 to $27.08 in 1894. This is due to foreign competition.

"We have," says Mr. Williams, "seen agriculture (our old-time staple industry, before we went to the strange gods of machinery) hopelessly depressed and as little able to save us as the deities of Rome the falling Empire. Now, we see our new gods deserting us for other nations. Industrial depression has of late years been the rule, instead of the exception. Our population is still waxing, and our means of providing it with an income dwindling. Is it not time to look things squarely in the face?"

The idea that England is losing in the iron and steel market seems to be a painful one for the writer. He says, in this connection: "By the time that Watts's steam engine and Cort's grooved rolls (1783) and Joseph Hall's introduction of the boiling process in puddling furnaces (1811) and Neilson's great discovery of the hot blast (1828)—to name a few epoch-making innovations—had become integral factors in production and manufacture, Britain had won the supremacy and was ready to take full advantage of the crowning triumph of the basic-steel process (1878). She was rich in ore and her ironmasters had learned how best to deal with it and to work the extract into manufactures; and in 1882, we touched our high watermark, for in that year, our total production of pig iron stood at 8,493,287 tons; of puddled bar, at 2,841,534 tons, and of bessemer steel rails, at 1,235,785 tons. We were the ironmasters of the world—an easy first in every branch of production. And now all that is changed. The world's consumption is greater than ever before, yet our contribution in the years since 1882 has dropped at a rate well-nigh unknown in the history of any trade in any land. From the 8,493,287 tons of 1882, pig iron has gone hustling down to the 7,364,745 tons of 1894. In 1894, the 2,841,534 tons of puddled bar of 1882 is represented by 1,339,062 tons; the 1,235,785 tons of bessemer steel rails by 598,530 tons."

The decrease in exports has kept pace with the decrease in production—4,352,552 tons of iron and steel were exported in 1882, against 2,649,998 tons in 1884.

The fall in prices during the last thirty years was very great in England. Old iron has fallen from £4.25 to £2.66 per ton; pig iron and puddled bar, from £2.92 to £2.30; railway iron, from £8.18 to £4.43; sheets and plates, from £12.38 to £9.13; tinned plates, from £23.61 to £12.26; and wire, from £19.64 to £17.90.

How different is the history of Germany's production. The production in the years 1886–1894 is here given.

Description.	1886.	1891.	1892.	1893.	1894.
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*
Raw iron	3,529,000	4,641,000	4,937,000	4,986,000	5,380,000
Iron and steel	3,496,000	5,064,000	5,131,000	5,387,000	5,525,000

The production of raw iron has been as follows:

Country.	1884.	1894.
	Tons.	*Tons.*
England	7,528,966	7,364,745
Germany	3,465,000	5,380,000

Mr. Williams finds the cause of this fact in the low cost of production in Germany, which, however, is not based on lower wages, as is generally and erroneously thought in England, for wages in the iron industry in Germany are, on an average, higher than in England and tend to become still higher. But Hochöfen (furnaces) are so constructed as to be more productive, and the economy is that less waste is experienced than in England. This is confirmed by members of the British Iron Trade Association who visited German mining establishments last year.

Shipbuilding, too, is a line in which the Germans have made astounding progress. Of it, Mr. Williams has to say: "For centuries, the German shipyards were a matter of small importance, but of late, the German nation has looked upon the clanging yards that line the shores of Tyne and Clyde and Lagan, and has said to herself, 'Why not?' Now, when the German takes an industrial longing badly, it is usually safe to conclude that he is well on the road to its fulfillment, and though shipbuilding was long regarded as one of the industries (almost, alas! the only one) in which the German had no chance, he has none the less girded himself for a trial of strength in it. To give the industry a helping hand, a law was passed as far back as 1885, enjoining that materials destined for the construction, the repairing, and the outfitting of seagoing vessels, inclusive of "gear" (as rigging, sails, compasses, cannon, pumps, handspikes, boats, and the like), should be admitted duty free. In 1894, the mercantile navy was increased by seventy-one bottoms, only fifteen of which were built in the United Kingdom, but fifty-four were built at home. At Stettin, there is a shipyard known as the Vulcan Works—an enterprise so formidable that (it is said) it is scarce to be surpassed in any part of the British Isles."

At the beginning of July, this year, there were in course of construction for the merchant service the following ships of over 160 tons register: In England, 774,000 total tonnage; in Germany, 113,000 total tonnage. Eighty-one thousand tons of those being built in England were German orders.

The total tonnage of the German merchant marine increased 8½ per cent in 1895; that of the English, only 3½ per cent. During the past five

years, Hamburg has doubled her fleet of liners. The old-established German lines are constantly growing and new lines are being established.

The English cotton-weaving trade shows a large falling off in exports. In 1881, cotton goods to the value of $180,891,650 were exported, against $133,121,317 in 1895; knitted goods fell from $3,026,654 in 1882 to $1,067,654 in 1895.

Another important English industry that has suffered is the chemical and drug trade. Peruvian bark (quinine), valued at $4,396,221, was exported in 1882, against $197,358 in 1895; guano, in 1876, $3,182,450, against $61,353 in 1895.

The English alkali industry has gradually fallen. In 1873, the export was $14,254,497; 1883, $10,341,492; 1893, $9,021,916; 1894, $7,937,280; 1895, $7,592,681. This is a surprising decrease, which is partly explained by the general decline of prices in this industry. Germany has no doubt been to a high degree the cause of this reduction, for her statistics show increasing figures. She exported, for instance:

Description.	1886.	1895.
	Tons.	*Tons.*
Natural and reduced salts	154,188	196,344
Stassfurt potash salts	146,561	221,184
Saltpeter	7,320	26,360
Soda	11,485	31,418
Aniline colors	1,713	7,135

China and Japan are prominent buyers of aniline dyes. Germany makes nine-tenths of the whole quantity of dyes used in the world. Some manufactories employ 6,000 workmen and 60 to 78 chemists, and pay dividends up to 28 per cent. Some of the chemists are always occupied in theoretical studies and experimenting with a view to discovering new processes and new compositions, and the money spent on such experiments is not lost.

In order to strengthen English trade, Mr. Williams suggests the abolition of the merchandise marks act, reduction of shipping cost in London harbor, levying duties on certain goods, reduction of English railway and steamship freight rates, better technical and commercial education, study of foreign languages, more careful study of the tastes and wishes of their customers, traveling salesmen who know the language of the country which they are to canvass, more heed to the merits of careful packing, and the like details of well-conducted commerce. Manufacturers must be up to date in the equipment of their workshops. The English must adopt the metric system of weights and measures, they must be more artistic, they must practice the imitative art, and, lastly, there must be a reform of the consular service.

THOS. EWING MOORE,

WEIMAR, *August 26, 1896.* *Commercial Agent.*

THE GERMAN HOP TRADE.

To-day, when Germany's wheat trade is hard pressed by the import from the United States, the Argentine Republic, and Russia, it may not be uninteresting to examine into similar signs in the hop trade. As a matter of fact, German hops in like manner are threatened by the competition of foreign countries, especially the United States, and no matter how great the industry and intelligence displayed in both branches in Germany, the enormous tracts of arable land in the United States are bound to secure the latter the upper hand in the end.

The German hop trade may be divided into three classes. First of all, there are the merchants, who deal with the consumers (brewers) at home and on the Continent generally; second, the merchants who deal with England on consignment; and, third, the large breweries, which buy directly from the producers.

Twenty years ago, German hops, together with the English product, ruled the markets of the world. But, as at that time, so to-day, the German hop trade is dependent upon foreign countries on account of overproduction.

During the last thirty-five years, Germany is said to have had only three bad harvests—1860, 1876, and 1882. In those years, the price of hops rose to about $119 per centner (50 kilograms=110.23 pounds) after the average price had been about $24. To-day the prices range from $8 to $35, the increased cultivation having naturally increased the production. Besides, foreign countries, especially the United States, have made equal progress in the culture of hops, so that the prospects for the German hop growers and dealers are becoming very gloomy indeed.

Prior to 1860, there was, according to statistics, very little export from Germany to the United States and England. In 1860, Nuremberg and Bamberg firms began to turn their attention to the export trade. At first, they exported to England only. In the same year, long-term trading between Germany and Antwerp and London sprang into life, whereas in Germany there is no such trading in hops to this day. It is said that there never has been a similar transaction at the hop exchange at Nuremberg. A few years ago, however, two hop firms of that place engaged in very heavy speculations with England and came to grief in it. Here is an example of their transactions: In June, a German dealer sells to an equally speculative Englishman 1,000 bales of hops at $23 per cwt., to be delivered at the end of October. If, at that time, hops should be quoted at $18 only, the buyer would rather pay the difference of $5 than receive the 1,000 bales; provided, of course, the price is likely to go down still more, so that the purchaser could, to some extent, recover himself again.

The Bavarian hop grower, being the best situated, because he grows other products besides, does not enter upon anything but ready-money sales. Brokers are very rarely employed. The merchants send their buyers, who

sometimes spend several weeks in one place, particularly if there be any tendency toward a fall in prices, for the German hop grower lacks the advantage of a review of the general position of the market, although, with the telegraphic service of to-day, it could be as easily obtained as is a review of the flour and wheat prices of the world's market by the baker.

The German hop producer likes to sell at three periods—September, October, and November. Only in Alsace does the hop grower make his contracts for the fall as early as spring, in order, as he says, to secure for himself a decent price, if possible. Alsace hops, being less in demand, do not prove so profitable to the grower as the Bavarian hops. In Bohemia, the principal hop-growing place is Saatz. There the highest prices are to be met with, because the hops grown there are all sent to Germany. Auscha, the other hop-producing place in Bohemia, has but inferior qualities and these are sent to England and Scandinavia. France buys foreign hops for the better classes of beer, while inferior hops are produced in the northern part of the country.

In England, the aspect of things is altogether changed since the United States have taken to exporting hops. California has become the chief competitor of the German hop exporter. This renders it exceedingly difficult to stipulate the prices in Germany, as many sorts are fit only for export. Even in the best of hop districts, there are in Germany spotted hops, against which the English brewer has no antipathy, provided they are cheap. Forced by American competition, the German hop exporter has to content himself with a very small profit, and while his business may still be a sound one, it is on the decline.

America still consumes certain qualities of German and Bohemian hops, because there is a great deal of German beer brewed in the United States, but even for this German beer, American hops are chiefly used nowadays. Russia, also, was at one time an important consumer of German hops. In the Empire of the Czar, beer drinking is not much on the increase, it is true, but still the consumption of hops is considerable. Now, there exists a Russian association for hop culture, which had good Bohemian plants imported into Volhynia and Poland. Already, there is a large surplus there for export. For all that, Germany continued to export large quantities of hops to Russia until the Russian Government began to bar the way by raising the duty from $1.30 to $6.40 per pood (36.112 pounds). This was the time of the "Zollkrieg" (customs war) between Germany and Russia, and German hop export was at once at an end. Only two years ago was the duty on hops lowered again by the Russian Government, which caused the German export to recover itself, at least to a certain extent.

As for the rest, the German hop trade seems to be able to hold its own only by the want of money of many breweries. This could be as easily proved as the development of a considerable portion of the brewing industry almost exclusively through the hop trade; the hop trade is the capitalist, the hop trade represents preeminently the spirit of enterprise, and it may

be said that all the rich hop merchants (there are some whose fortunes are estimated at from $3,000,000 to $5,000,000) not only give extensive credits to the private brewers and small stock companies, but assist them with cash. This is done at a cheap rate—at 4 to 5 per cent on mortgage or very often against note of hand only. Actual usury is of very rare occurrence in such cases, for it is clear that a hop dealer can only reckon upon a large income every year if the brewing business flourishes, and not if it is undermined. This relation of the German hop dealer to the brewer explains, at any rate, the fact that even in years of high hop prices (as in 1894) the foreign product could only with difficulty obtain a footing in the German market, though it is only fair to state that in that year a considerable quantity of American hops was sold in Germany.

The above statements have been confirmed by Bavarian hop growers and interested merchants of this city. As regards the decrease of the export of German hops to the United States, the statement is borne out by the statistics of exports, and interested parties are of the opinion that the American brewer will gradually get used to the American article and that the German hop export to the United States, which to this day is still fairly important, will cease altogether. As stated heretofore, it is a fact that American hops have already become a dangerous competitor of the German article in the English market.

LOUIS STERN,
Commercial Agent.

BAMBERG, *September 14, 1896.*

BEET-SUGAR CROP OF EUROPE.

The figures which follow are taken from the estimate of Mr. Licht, the German authority on beet-sugar statistics:

Germany.—Until September, the weather had been extremely favorable to the crop. The beets are very well developed and of good size. Quantitatively, the crop will be enormous, but the development of the saccharine in the beets has been somewhat arrested by a rainy and cold September and October. Considering, however, the enormous quantity of the crop and the increase in the area under cultivation, which is estimated at about 15 per cent, a production of 1,800,000 tons* of raw beet sugar may be expected, a result which will almost equal the unprecedented crop of 1894–95—1,844,586 metric tons (2,033,287 short tons).

Austria.—Here, the same climatic conditions prevailed as in Germany. We can, therefore, calculate on a considerably larger crop, but somewhat inferior in quality, compared with that of last year. Licht estimates the crop at 1,050,000 metric tons of raw beet sugar, which, however, is considered rather high by such authorities as the Economiste Français, of Paris, and Mr. Giesecker, of Belgium. It may be safe to deduct 100,000 tons from Mr. Licht's figures, which would leave the yield at 950,000 tons.

*The ton used throughout this report is the metric ton of 2,204.6 pounds.

France.—The climatic conditions were more favorable than in Germany or Austria, and a crop of 780,000 tons of raw beet sugar may be expected.

Russia.—The crop will probably show an increase in quantity of about 6 per cent, with a slight decrease in quality. Mr. Licht estimates the raw beet-sugar crop at 750,000 tons, while the Economiste Français and Mr. Giesecker are considerably lower, the former by 65,000 tons and the latter by 100,000 tons. It may, therefore, be safe to deduct here, also, say, 50,000 tons from Mr. Licht's figures, which will leave the estimate at 700,000 tons.

Belgium, Holland, Sweden, and Denmark.—These will also show an increase in the quantity and a decrease in the quality of beets. The raw beet-sugar crop may be estimated at 265,000 tons for Belgium, 145,000 tons for Holland, and 170,000 tons for Sweden, Denmark, and all other European countries together. This would make a total for Europe as follows (for comparison, I have also added the estimates of the Economiste Français and Mr. Giesecker):

Countries.	Estimates of—		
	Mr. Licht.	Economiste Français.	Mr. Giesecker.
	Tons.	*Tons.*	*Tons.*
Germany	1,800,000	1,750,000	1,740,000
Austria	1,050,000	900,000	905,000
France	780,000	780,000	760,000
Russia	750,000	685,000	650,000
Belgium	265,000	255,000	265,000
Holland	145,000	135,000	155,000
All other countries	170,000	170,000	170,000
Total for Europe	4,960,000	4,675,000	4,645,000

Even if we deduct 150,000 or 160,000 tons from Mr. Licht's figures, we will have a raw beet-sugar crop in Europe of 4,800,000 tons, which fully equals the unprecedented crop of 1894–95 (4,792,530 tons) and exceeds last year's by about 500,000 tons. If we further consider that the visible supply on September 1, 1896, the beginning of the new campaign year, was about 1,150,000 tons, against 1,262,263 tons on September 1, 1895, and this notwithstanding the falling off in the Cuban sugar crop, the prospects of a material increase in the prevailing low sugar prices are not very promising, even if the shortage in the Cuban production should continue.

Efforts are, therefore, being made in Austria and Germany to form a syndicate of the raw-sugar manufacturers, with a view to control, in a measure, the raw-sugar trade in both countries and for export and establish better prices. I have interviewed leading merchants here, but have found none who believes that this syndicate will ever be organized. The number of the factories is too great and the conditions under which they manufacture are too varied. The large newly established factories—especially in the East, where land and labor are cheap—are able to work with a small profit, even

at the prevailing low prices, and nothing would please them better than to see the smaller factories in the old beet districts, where land and labor are dear, driven to the wall, and thus competition lessened.

JULIUS MUTH,

MAGDEBURG, *October 23, 1896.* *Consul.*

INSURANCE AGAINST LOSS OF WORK.

German journals are very much interested in an insurance movement in Switzerland. State socialism, it is claimed, has its strongest hold in the mountain republic. In almost every need the people look to legislation for relief. Notwithstanding numerous failures, the masses of Berne and Basle, Geneva, Zurich, and Lausanne look to the Government for aid unknown and unheard of in other countries. In 1893, a petition was sent to the Federal Government demanding laws against enforced idleness. The petition urged that each citizen had a right to remunerative employment, and asked that the law be invoked to aid him in getting it. To do this, it was demonstrated that in certain industries those then employed would have to work fewer hours in order to leave something for those who otherwise would be forced or kept out of employment. To carry out this scheme, the State was either to employ the idle in State factories, making the same goods, or to compel existing institutions to take them. The proposition was voted down by 308,289 votes against 75,880 in the popular assemblies. The vote by cantons was "No," and unanimous. However, to show good will in the matter, the Federal Assembly urged the federal council to appoint a commission to inquire into the matter. It might cost money, but it would be money well spent. The object was to find out whether it would be wise or worth while to open bureaus to aid the unemployed to get work and societies to insure against loss of labor. The commission has not reported. This has not deterred two cantons—Berne and St. Gall—from going ahead. Basle, Zurich, and Lausanne are very much interested; what action they will take is not known. The Berne plan differs very essentially from that of St. Gall. In the former canton, it is left to the free will of the laborer to insure or not, as he or she pleases; in St. Gall, each must insure. The basis of the Berne system is as follows: The working people, laborers and professional men, are all united under one head. Each person insured pays 8 cents a month. Each city in the canton contributes 7,000 francs ($1,351), formerly 5,000 francs ($965). Members must have been enrolled six months, paid dues regularly, and be out of work fourteen days at least before being entitled to a pension. The aid given is 1 franc daily for unmarried men and 1.50 francs for married men. Only men are mentioned. The money is paid only during December, January, and February. A workman who refuses to take any work offered him, or loses his work through his own fault, or joins in a strike loses all rights to the pension. On December 31, 1895, the organization numbered 605 members and had paid pensions to 169 persons

during the year. In 1894, there were 390 members, and the parties to whom pensions were paid numbered 226. In this case, it was more a State help than a workingman's insurance club; for in 1894, unaided by the cantonal subscription, payment would have been impossible. Most of the men supported or aided belonged to the building occupations. These are more or less idle year in and year out. Hence it is hard to say what worth such an effort is to have in solving the huge social and economic problem, *i. e.*, the effort made in Berne. In St. Gall, the result was better because it was based upon obligatory membership and contributions. There each person, citizen or stranger, earning under 5 francs (96½ cents) per day was compelled to contribute. Children who earned under 2 francs daily were exempted. The payments varied with the amounts earned, viz, persons earning 4 to 5 francs (77.2 to 96½ cents) paid 30 centimes (6 cents) a week. The pension rates paid out varied also in accordance with wages, running from 1.80 to 2.40 francs (34¾ to 46.3 cents), but in no case could anyone get pension for more than sixty days in one calendar year. In all other respects, the regulations were like those of Berne. It is estimated that the year's income will be 30,300 francs ($5,848) and the expenditures, pensions, etc., 38,000 francs ($7,334). This deficiency, it is hoped, will be wiped away, never to recur again, once the thing is got into good working order. Much misery, it is true, might in this way be wiped out, but men whose labor has always been steady and is likely to continue so complain bitterly about being compelled to support others in idleness whose labor, though at times uncertain, is for that very reason better paid when there is work. It is not in the nature of things for such a system to succeed even among so loyal, loving, and gentle a folk as are the Swiss. The effort is not in vain if it will teach the thoughtless how hard it is to make laws or to institute any system that is to take the place of thrift and economy during the days when work is plentiful. The decision of the commission will record the popular will, and that, as far as can be judged from facts at hand, will be adverse.

J. C. MONAGHAN,

CHEMNITZ, *September 26, 1896.* *Consul.*

THE EXPERIMENT AT ST. GALL ABANDONED.

In a recent communication to the Department of State, Consul Monaghan speaks of the interest felt in Germany in two experiments in the matter of State insurance against loss of work then being made in Switzerland, in the cantons of Berne and St. Gall, respectively. Mr. Monaghan gives the principal details of the two systems, pointing out that while the Berne system is optional, that of St. Gall is obligatory on the laboring classes.

It may be of interest to the Department to know that, so far as the St. Gall system is concerned, its abolition was voted on November 8, 1896. This action was taken at the instance of laborers themselves, who found that a system which insured against loss of work resulted in the promotion of

laziness and idleness. In fact, a knowledge of the existence of this system of insurance had drawn to St. Gall a considerable number of unemployed from other parts of Switzerland, with the object of obtaining support at the expense of resident laborers. The resolution providing for the abolition of the St. Gall system of State insurance provides also that the same shall take effect on and after June 30, 1897.

IRVING B. RICHMAN,

ST. GALL, *November 16, 1896.* *Consul-General.*

THE METRIC SYSTEM IN ENGLAND.

The English chambers of commerce are now again seriously agitating the use of the metric system in England, and have petitioned their Government for its introduction and immediate adoption. From the activity that is being shown, it would seem that the date of the actual use in Great Britain of the metric system is not far distant. Mr. Balfour, in a recent interview with a deputation sent to consult him on the subject, expressed as the only difficulty in his mind the fact that retail dealers and most of their customers would not be prepared for the complete change from the present old system of measures. In the meantime, the same question has been discussed and likewise urgently seconded at a great many meetings held by parties interested. Mr. Ritchie, president of the commercial court, has also brought in his bill regarding the introduction of the metric system in England, and the authorities of the British commercial community have been unanimously urging its use, but all appeals and endeavors thus far have failed, in consequence of the extreme conservatism of the English. Mr. Ritchie has acted most cautiously in the matrer, arguing that "there exists no reason for abolishing weights and measures in use for ages," but says: "At the same time, it is an urgent matter of necessity for the English people to become acquainted with a system of measures adopted by the whole continent," excepting Russia, and by nearly all other leading nations, the United States excepted.* The British and American merchants are losing much valuable business because their price lists are issued in the old and inconvenient forms of weights and values. Secretary Balfour, in England, motions to make the metric system legal, and in his bill the exact equivalents between English and metric units are given. At Bradford the subject has been agitated and discussed from every standpoint; the holding of an international congress being in debate, for the purpose of regulating the numbering of yarns. The object of this movement has an army of sympathizers in Germany among the weavers and spinners. A great

* The metric system has been officially recognized in the United States to the following extent: On July 28, 1866, the following was enacted (section 3569, Revised Statutes, second edition, 1878): "It shall be lawful throughout the United States of America to employ the weights and measures of the metric system; and no contract, or dealing, or pleading in any court, shall be deemed invalid or liable to objection because the weights or measures expressed or referred to therein are weights or measures of the metric system." The next section gives the tables of the equivalents of the present weights and measures in the metric system. Section 3880 (Revised Statutes, 1878) provides for the furnishing of certain post-offices with metrical postal balances for the weighing of letters.

change has come among manufacturers and machinists, and that change is due to two reasons—they have come to know something of it and to see the great advantages which would be secured in the important matter of convenience and facility, and they also realize that the great European markets are being closed, to a large degree, to all machines and manufactures that are not based on the metric unit. "Great Britain maintained for a long time a leading position among the nations of the world, by virtue of the excellence and accuracy of its workmanship, the result of individual energy; but the progress of mechanical science has made accuracy of workmanship the common property of the world." These words, spoken by the president of the British association in a recent address, are worthy to be remembered by the manufacturers in England and the United States The adoption of the metric system by the latter would leave England and Russia the only nonmetric countries in the world. Very evident is the fact that English manufacturers are being outstripped in a field that was once regarded as peculiarly their own, and this is due to overcaution, want of ready appreciation of new inventions, and slowness to grasp new ideas. The splendid system of technical education with which Germany has provided herself is, of course, another great factor in her advance. Germany, for example, is becoming a formidable rival of England in connection with the South American trade. British exports to South America have been gradually decreasing, while those of Germany have been as persistently rising. The cause for this falling off has been, in part at least, England's delay in adopting the metric system, the English pounds, shillings, and pence and yards, feet, and inches being absolutely unintelligible to people of the Latin race. This fact and example is fast gaining ground in the United States, where the metric-system campaign has been going steadily on. The National Meteorological Society, of world-famous experts, aided by the most influential circles, so interested are all, signify their desire to further the cause.

Naturally the almost cosmopolitan use of a system of weights and measures totally different from that employed in the United States places its merchants interested in foreign trade at a great disadvantage. Not only are American price lists confusing to the foreign merchants, owing to the different denominations used, but the fact that foreign lists are made in terms equally unfamiliar to American merchants is said to result in unfair discriminations and often in fraud.

GEORGE SAWTER,

GLAUCHAU, *September 12, 1896.* *Consul.*

AMERICAN PRODUCTS IN BRADFORD.

For the past two or three years, United States consuls have been pointing out to manufacturers and exporters at home that in order to obtain a foreign market they must work for it—compete for it as do the Germans and, in a lesser degree, the English. Time and again, it has been made plain that the

duty of consular representatives was to point out the opportunity, the needs and requirements of a country—the chance, in other words, to sell goods of whatsoever character, and that it was then the exporter's or manufacturer's duty to embrace the opportunity. A consul is not permitted by the Government to become a commercial traveler and solicit orders.

Some enterprising American firms have grasped the idea and the results have been most gratifying. Hitherto, large wholesale importing firms in London or Liverpool have generally been solicited to take agencies for American specialties in manufactures or in certain products. The older and wealthier these firms, the more conservative they have been. Operating on recognized lines, they have hesitated to take up new commodities and have been slow in pushing them when they did. For this reason, many an enterprising American firm has found itself with very respectable agents in England, but without trade. Recently, some United States houses have discarded this old-time method, have sent over their own agents and their own travelers and called upon large retailers, directly soliciting import orders. If the result has been as beneficial in other parts of England as it has been in Bradford, such firms have reaped a rich harvest and have inaugurated a business that will continually grow.

Some weeks ago, the representative of a New York brass founder called at a prominent hardware establishment in Bradford (Taylor & Parsons, Bank street) and offered the agency for brass valves. The house did not see its way clear to take it up, but a rival establishment did. The first firm soon found out that the traveling man for the rival firm was making $35 per week extra as his percentage or commission on the sale of the brass valves alone. A second man representing another brass founder in New York now appeared on the scene and the house that was first approached was only too glad to take the line up. The astonishing result is this: They pay the American firm $3.60 for the same quantity and quality of goods they paid British makers $5 for, and the carriage by sea and rail from the United States to Bradford is 5 per cent less than from London, by rail alone, to Bradford. The American goods were also carefully packed and assorted, while the domestic valves were thrown in any way. In investigating this subject, I ascertained that, in each instance, the American commercial man concluded his business in Bradford in half a day.

FILES.

It is not, perhaps, generally known that American files have been largely imported into this country and still command a large sale. One order recently amounted to 1,000 dozen. A local dealer informs me that 200 dozen would have been considered a large order for an English house. The American files, though made by machinery, are said to be very good and come in assorted sizes. They compete with Sheffield and Warrington houses. This line is constantly being pushed and the trade will grow larger from year to year.

SHEARS.

Go into any cutlery or hardware shop in Bradford and ask for shears and you will be handed a pair bearing a Newark or Trenton, N. J., imprint. They are considered superior in every way and one of the strange things about it is that they must be purchased through Sheffield, which is supposed to be the rival of American cutlery manufacturers. These shears, a dealer said to me, are superior to all others, because they are "sweet cutters." The shears used by tailors and cutters are almost entirely of American make.

RAZORS AND SHAVING SOAP.

The safety razors on sale at cutlers are of American make. An injustice to the average customer is worked, however, in the fact that they are sold in sets of seven to the case—one for each day in the week—for $5 per set. This places them beyond the reach of all but a select few. If sold singly for $1 to $1.50, as other razors are, they would command a very large sale, where it is now only ordinary. Judging from the advertisements to be seen on billboards, in railway stations, on the landscape, and in the newspapers one would think England a land overflowing with soap, yet it is a fact that a preparation made in Connecticut plainly labeled "Yankee Shaving Soap" now has the call. It is used and sold in all first-class barber shops and is recommended by barbers to their customers as being the best and purest extant. It retails in cake or in shaving stick for 25 cents and has become quite an item in American exportation. The thousands of hair clippers operated on lawn-mower principle which are used so much instead of shears to cut hair are of United States manufacture. It has often been complained that they can not be properly sharpened in England and it has been suggested that some good American mechanics would do well to start up an establishment here where they could be sent for repair. Washing soap, toilet soap, and a soft soap for washing wool, all of American production, have an enormous sale.

TURBINE WATER WHEELS.

Recently, the firm of Forster & Fison, manufacturers located near Bradford, had put in at their mills two turbine wheels for water power. They are the largest wheels of this character in England and are known as the "Hercules Turbines," manufactured by the Holyoke Machine Company, of Worcester, Mass. They are sold by John Turnbull, Jr., & Sons, of Glasgow. Mr. Forster, one of the founders of this firm, was the late Right Hon. William E. Forster, the great Liberal statesman and commoner, who was at one time lord lieutenant of Ireland in Mr. Gladstone's Ministry. The wheels give perfect satisfaction.

FURNITURE.

Furniture from the United States of nearly every description can now be had here. It is good and cheap. The writer of this went into a Bradford furniture shop to purchase a desk. One of the modern canopy self-

locking desks was selected, price £60. It was then discovered that it was made in Cincinnati, Ohio. Lumber for boxes and various woods used in manufacturing and for picture frames are imported from the United States.

PRINTING PRESSES AND MATERIALS.

American printing is in high repute here. Naturally, therefore, the machinery that produces it is wanted. Bradford printers buy both our job and newspaper type. A Chicago firm has been especially active in advertising its wares. One daily newspaper uses the Thorn typesetting machines, manufactured at Hartford, Conn. One of the proprietors of the Bradford Observer has just returned from the United States, whither he went to purchase a new printing press. He found what he wished at the works of Walter Scott, Plainfield, N. J., and paid £20,000 for it. Papers published in the interest of the printing trade are full of advertisements of American type, machinery, and presses. One of the leading printing firms of Bradford, which, also, has a London house, recently purchased one of Colt's Amoury presses, a letter-press printing machine. It is made by Colt's Small Arms Manufacturing Company, of Hartford, Conn., and commands a good sale in England. This machine was purchased from Mr. P. Lawrence, agent, Farringdon Road, London, E. C. The incentive for purchasing an American machine was that it is one of the best known. The general appearance and workmanship of the press are good and it gives satisfaction.

WATCHES, CLOCKS, ETC.

One Bradford firm of jewelers alone (Fattorini & Sons) has a stock of twenty thousand Waltham watches. In addition, it has watches of the Elgin and other makes and sells great numbers of them. The general run of customers ask for watches with the Waltham works. The small American clocks and alarm clocks of the Seth Thomas make are also in great repute. These are imitated by German makers with an inferior article, which is sold cheaper. The jewelry salesman shows both the American clock and the German imitation and remarks: "These American clocks are the best that are made and sell at $1.75 and $2; this German clock, which looks much the same, sells for $1.25 and $1.50. You can take whichever you like, but the American clock is much superior." Unless the buyer be very poor, the American clock has the preference. Many articles of jewelry of American origin are also sold.

BOOTS AND SHOES.

In a previous report, I referred to the fact that boots and shoes of United States manufacture are sold here. I have made inquiries which lead to the conclusion that if special effort were made to produce an article suitable for the climate, a large trade could be done. It must be remembered that the north of England has a cold, damp climate, and that it is likely to be disagreeable under foot a greater portion of the time. For this reason, you find a Yorkshire man or Lancashire man invariably wearing a heavy, thick-

soled boot. The work people even wear clogs, or shoes with wooden soles. An intelligent Bradford dealer, who sells some American goods, gives the following criticisms and particulars: "They (the American boots or shoes) are of fine quality as regards the uppers only, the soles being defective and quick to give way in this climate. They are less in price than the English goods of the same class. The impression created can not be considered satisfactory, mainly owing to the sole material, which admits damp quickly. They would be more desirable if 'made military heel.' There is no reason why the sale of American boots (shoes) should not be largely increased if above defects were remedied. In style, finish, good workmanship, and appearance they are all that could be desired."

MISCELLANEOUS.

It would be well if American manufacturers, exporters, etc., and publishers of trade and agricultural papers would send catalogues and price lists or their journals to consuls more than they do. Often there are callers at the consulate who desire to purchase some article or to handle a line and wish to know the names of manufacturers or producers. Some time ago, a small shopkeeper from a village near Bradford called to inquire the name of the makers of a certain lamp chimney, with the idea of direct importation. Recently, an English gentleman resident in South Africa called to inquire the names of firms manufacturing steam corn shellers, which he was desirous of importing. He stated they had plenty of hand shellers in Africa, but, so far as he knew, not a single steam or horse power sheller. There was not at the time a book or pamphlet at the consulate giving the information, but one has since arrived and it has been given. I have had inquiries made concerning leather belting, machinery, wood dobbins, molding for picture frames, lumber, printers' type, corn meal, ready-made clothing, phonographs, and whisky and tobacco. It is, perhaps, useless to allude to the fact that the United States are considered the paradise of patent medicines and other preparations. Dozens of them are advertised every day, and I am told the complete list for sale by chemists would run over a hundred.

FOOD PRODUCTS.

Our food products, such as cheese, bacon, lard, hams, flour, wheat, prepared oats, barley, corn, mutton, beef, and an enormous variety of tinned or canned goods are on sale at all grocers and provisioners. In the latter, are included canned tomatoes, peaches, pears, apricots, plums, cherries, green corn, baked beans, and beef extracts; also, pressed or corned beef, mutton, and beef tongues, and the various other edibles put up by Chicago and Omaha packers. The Australian meat packers have attempted to compete with the United States in these tinned-meat products, but have made little headway, on account of the excellence of the American article.

At this season of the year, apples are rolling in from the United States by the thousands of bushels, and the United States are the chief source of

supply. Nearly every middle-class family buys in enough to last until the middle of February. They retail at the small shops at from 2 to 4 cents per pound, according to quality. Were it not that railway freight is so high between inland towns and the seaports, fruit would be much cheaper and more of it would be consumed. In season, great quantities of Florida and California oranges are also imported.

CLAUDE MEEKER,

BRADFORD, *October 30, 1896.* *Consul.*

THE CYCLE INDUSTRY OF THE UNITED STATES.

I have pleasure in inclosing herewith an interesting article from the London Times, of September 26, upon the "Cycle industry in the United States." The republication of certain of the facts by the Department of State might be of advantage to those engaged in the cycle industry or in the trade.

CLAUDE MEEKER,

BRADFORD, *October 6, 1896.* *Consul.*

[From the London Times]

THE CYCLE INDUSTRY IN THE UNITED STATES.

Prior to 1885, nearly all the cycles used in the United States were imported, mainly from England. The number of domestic manufacturers was only six, who in the year mentioned turned out about 11,000 bicycles, which were probably fewer than the importations. It was not until 1890 that the manufacture assumed anything like fair proportions. In that year there were seventeen factories which produced about 40,000 cycles, and, for the first time, the foreign manufacturer began to feel the effect of domestic competition. In 1894, the number of factories had increased at a rapid rate, and bicycles to the number of 100,000 or 125,000 were turned out. In 1895, the production bounded up with something resembling magic, amounting to about 600,000 cycles of various grades. The number of manufactories has now grown until there are more than five hundred, counting none which turns out a product of less than 1,000 machines a year. If all the smaller ones were included, the number of establishments would probably reach eight or nine hundred. The capital invested in the plants of these five hundred large factories is placed at $90,000,000, and the lowest estimate of the output for the present year is a million completed bicycles, worth $60,000,000. This production is not limited to one part of the country. Centers of the industry are found in New England, New York, and Pennsylvania, and in Ohio, both at Cleveland and Toledo, there are large groups of factories. The same is true in Indiana, in both of which States, as well as in Pennsylvania, the manufacturer has the advantage, in some places, of natural gas. But the industry has moved still further west, reaching a large development not only in Chicago, but in many small places in Illinois, Michigan, Iowa, and Missouri. In one town in Illinois there are sixteen factories, which turned out last year 175,000 complete bicycles, and which, it is expected, will put forth this year 210,000.

Until two years ago the movement of complete bicycles from England to the United States, although checked, still continued. Then a change came over the trade, and steel tubes became the feature. This was shown by a report made by the United States consul in Birming-

ham, the center of the industry in its various branches under date of May 8, and published at Washington in the June number of the CONSULAR REPORTS, in which he said:

"The cycle industry has had a very rapid and unlooked-for growth during the past year, though mainly for domestic sale and use. Instead of importing complete machines, as was done up to 1894, the manufacturers of the United States have made long contracts for taking practically the whole steel-tube product of many factories. The amount of these exported from this district in 1894 was $85,899.55. In 1895, the shipments amounted to $507,041.29, and for the first quarter of this year the amount had risen to $231,200.36. As showing the decline of one industry while another is rising, the exportation of bicycles from this district fell from $470,890.73 during the first six months of the year 1893 to $90,968.61 during the last six months of the year 1895.

"Almost without notice, tubes and all the component parts that enter into the structure of bicycles became the features of the market for speculative or investment purposes. There is a general feeling that this condition of affairs can not long continue. Some tube-making machinery has gone to the United States, although the movement was carried on very quietly for several months after the process began, but the largest part has been made from designs procured here. The general impression is that our people will be able to supply their own wants by the end of the year 1897, and that, as a consequence, the manufacturers in this district can not count upon an American demand beyond that time."

All estimates seem, however, to have understated the actual development of the tube-making industry in America. The amount of tubing necessary to make a bicycle is calculated to be 20 feet, so that the total amount put into the product there for this year will be from 20,000,000 to 24,000,000 feet. The latest advices concerning the development of tube making are that seven great companies, situated in widely separated parts of the country, have a capacity of 82,000,000 feet of tubes per year. Some portion of this will find its way into steam boilers, and new uses will probably be developed for it, though it will, in the main, be made for bicycles.

It is not only in the manufacture of cycles and tubes that the industry has been developed. The makers of cyclometers, bells, lamps, repairing tools, locks, racks, oils, belts, as well as of bicycle suits, gaiters, shoes, gloves, and hosiery—all the various articles that enter into the outfit of the most exacting cyclist—have kept pace with the manufacture and the sale of machines. It is estimated by the best authorities that the amount of capital invested for the manufacture of bicycles, tubes, and all collateral undertakings is now about $125,000,000, and that 150,000 people are employed in designing, making, and selling these various products. The effect of this rapid growth is that no complete cycles are now imported into the United States, while the value of tubes, bells, lamps, and the other paraphernalia taken from other countries has declined, and is still going down. Foreign firms no longer have branch houses or representatives in New York or other American cities; if any of their machines are sold, it is merely one here and there, kept by some dealer or broker.

But this is not all. This immense production, far beyond the home demand, has forced manufacturers to look for a foreign market To judge from the returns published by the Treasury Department, they have met with some success. Prior to June 30, 1895, the end of a fiscal year, the export of cycles and parts had been so small that they found no separate enumeration in the returns, and for the last half of the same year the value in these articles exported only amounted to $243,721. The progress of the export trade in these articles for the next six months is shown by the returns to have been as follows: January, $89,182; February, $147,819; March, $189,635; April, $330,990; May, $380,867; June, $515,798; making a total of $1,654,291, or nearly seven times the amount sent abroad during the same period immediately preceding. They further show that nearly one-half of this export, both of completed machines and parts, has come to England. As nearly all the value was for complete cycles, it is probable that at the wholesale prices—only high-priced machines being sent here—the number offered in England has been from 12,000 to 15,000. Germany is the next largest customer, France being the next, while some shipments have been made to every

European and South American country. Strangely enough, few machines of American manufacture have gone to Australia or South Africa, the English manufacturer still holding these markets with no serious competitor. The United States consuls have made elaborate reports as to the best methods of reaching the markets of the countries to which they are accredited, and have been able to supply much valuable and interesting information. Even bicycle machinery has been exported, some going to France within the past few weeks.

As far as can be determined, the manufacture has been developed with due regard to the highest quality. It is claimed that the greatest care is taken in the selection and proving of materials, and so much caution is observed as to the complete machine that, in one special factory, it must pass through five hundred and eighty-four inspections before it is permitted to go into the market. The study has been to develop strength and lightness combined, and it is to this that American manufacturers attribute their success in meeting competition in foreign markets. They claim that, although their bicycles are much lighter, they are adapted to all descriptions of roads, to all kinds of riders, and to every purpose to which they may be devoted. By developing these points of lightness and strength they claim to be able to make a bicycle which, while weighing 26 pounds or less, will safely carry 300 pounds weight over any road. This improvement in methods and machinery has resulted in a decided reduction in price. In 1893 the best bicycles were selling at retail for $140; now the same quality of machine—perhaps much better, owing to the greater experience of workmen and to improved processes—sells at $100. The downward tendency must be accelerated by the sharp competition which has arisen and is becoming still sharper.

In many respects it is one of the most surprising developments that has ever taken place in the manufacturing industry of the United States within the same length of time. When it is remembered that, less than eleven years ago, there were only six firms engaged in the business, with an output of a few thousand cycles, where there are now more than five hundred leading firms, with a product of 1,000,000, and innumerable smaller ones, which will probably add 200,000 more, comment seems hardly necessary. As nearly as can be known more than 3,000,000 bicycles are already in use in the United States, and some trade authorities make the number greater than this by nearly a million. Even the smaller estimate shows that nearly 1 person out of 24 of the 70,000,000 of people has already taken to a cycle as a matter of business, amusement, or health. In France, where the number is known because of the collection of a tax, the proportion is thus far only 1 in each 250 of the population. As the mountainous districts of the United States are not generally thickly populated, and the country as a whole is more level than in Europe, it is not difficult to understand the rapid development of the cycle as a method of travel. On the other hand, the fact that in many parts the roads are ill-adapted to the use of cycles during a considerable part of the year would seem to have a discouraging effect upon this development. One result has been the starting of an agitation, widely distributed, for the improvement of roads, a movement which is likely to do much good. The bicycle has also reduced the demand for horses and carriages and for everything that contributes to the furnishing of either. In some cities it has affected the income of tramways and cabs, and has even reduced the volume of short-distance or local travel on railways. The number of riders carrying machines with them has been sufficient to change the customs of the railways, and as a result bicycles are now carried free as passenger's baggage. The last feature has reached such proportions that, during the first two weeks in July, the railways running out of New York City carried 75,000 bicycles for outgoing passengers, the Erie road alone handling 5,000 in one day for persons leaving home for the national holiday, the Fourth of July.

In spite of the large domestic demand, such an unlooked-for growth as this is certain to have an effect upon the bicycle industry in other countries. The high price of labor, which some think a drawback, is really an advantage, because high-priced labor is so efficient and its ingenuity in the devising and manipulation of machinery is so highly developed that the labor cost of the completed article is less than it is with lower priced labor working under less favorable circumstances. So far as the trade of the United States with foreign countries is

concerned, in this, as in other manufactured articles, the country is practically upon the basis of free trade, because, under the law, 99 per cent of the duty paid on any imported material used in products sent abroad is refunded by the Treasury. Thus the inventive faculty has an opportunity to assert itself. In this case, too, great foresight was shown by manufacturers in making contracts abroad for materials, while most of the machinery has been made from home designs, and is adapted, in the highest degree possible, to the saving of labor. In spite of the rapid growth of this trade, the speculative element has entered into it far less than has been the case in England. The big manufactories have not, in general, been floated into limited companies, but the expansion has taken the natural course of increasing the number of concerns, while the older ones have enlarged their facilities and so have brought their capacity up to the new demand.

It would be idle to make predictions about the future development of what is really a new industry, but in any event it is plain that whatever the result may be, the United States must be reckoned with as an element in it. Unless there is some check in the demand, it seems likely, from the activity shown by transatlantic manufacturers, that from 40,000 to 50,000 cycles of high quality and of American make throughout will be offered in the English market before the close of the season of 1897.

THE BICYCLE INDUSTRY OF ENGLAND.

Since my report, in May last, upon the progress of the cycle industries in this district, development has continued on the same lines. The old-established factories have been engaged to the full limit of their capacity, greatly enlarged though it has been from time to time. It is estimated that from five to eight thousand operatives have been drawn into this branch of manufacture from other trades during the past year. Some branches of business long stagnant have thus been turned into paying properties for the time, and much idle labor has found employment at good wages.

The trade returns for the first nine months of 1895, show the export of cycles to the value of £1,147,146 ($5,582,012); during the same period of this year, they amounted to £1,326,077 ($6,452,691). This increase is small compared with the growth of the export trade from the United States, but it proves that even with increased facilities, the home trade has almost monopolized the machines made here, showing that about 750,000, worth between £11,000,000 ($53,426,000) and £12,000,000 ($58,392,000), have been made in England during the present year. The manufacturers claim to be well prepared for any extension of trade in the colonies, and insist that they can retain it, whatever its proportions.

The trade with the United States in cycle materials continues to decline. My last report on this subject showed the growth of the steel-tube trade, which reached its highest development during the December quarter of 1895, when tubes to the value of $252,651.58 were sent. The following quarter showed a reduction to $231,200.36. This decline continued with accelerated rapidity during the second quarter of the year ended June 30, when tubes to the value of $130,253.84 were declared; but this was eclipsed during the quarter ended September 30, when the shipments amounted only to $62,787.92. Many of the contracts made by our people have expired and

others are running out. My prediction that trade in these products would practically cease by the end of the season of 1897 bids fair to be more than verified.

No complete bicycles have been sent to the United States from this district since my last report. On the other hand, a good many machines of American manufacture have been sold even in this district. It is not safe to predict how long this demand will continue, but as trade conditions in general have improved during the past year, it is likely that a considerable number of machines of good quality may be sold, if offered at prices slightly lower than those ruling here for the same kind. Nominally, retail prices have not advanced; in reality, they have, owing to the reduction of trade discounts.

If the demand for cycles continues over the world, the factories will probably turn out 1,000,000 machines during the next year.

GEORGE F. PARKER,

BIRMINGHAM, *October 19, 1896.* *Consul.*

BICYCLING IN GERMANY.

Complaints are very frequently made by traveling American bicycle riders in Germany of obstacles and delays to their travel caused by the very rigorously enforced laws governing the use of bicycles on the public roads in this country. For the benefit of these American bicycle tourists, a few of the more strictly enforced rules which cyclers are called upon to observe throughout the German Empire are cited.

Cycling on public streets and roads is subject in this country, and particularly in Saxony, to minute and most carefully enforced police regulations, which, indeed, in many places, prohibit entirely the use of brakeless machines. The roads are, as a rule, with but few exceptions, perfect, and wheeling is smooth and easy, but on account of the rainy weather which prevails most of the year, wheel guards for wet days are indispensable. In the first place, every machine must have an open plate or shield, affixed to the rod of the brake or handle bar and be provided with a spring lid, on which is engraved in clear lettering the name, profession or rank, and residence of the rider of the bicycle. In lieu of this, I would suggest that the card of rider, with address, etc., be attached to handle bar, which would be in compliance with the law, and would temporarily answer every requirement in this way. The alarm bell is, of course, demanded everywhere. The law requires that the night lamp be placed rather high on the wheel and be kept lighted by the rider when traveling from within half an hour after sunset to half an hour before sunrise; furthermore, the light must shine through uncolored glass, before the rider. Each bicycle must be provided with an easily-managed brake, operating quickly and powerfully. Cycling on roads exclusively intended for pedestrians or on elevated footpaths of highways is strictly prohibited. Two bicyclers may ride side by side, when it can be

done without blocking the thoroughfare or annoyance to other riders or vehicles; otherwise, single file is the rule. More than two machines are not allowed to occupy the road side by side under any circumstances. When meeting with other bicycles, or overtaking such, or, further, when approaching passages of the road where it is not possible to see a clear distance, or when going down a steep descent, the cycler is obliged to give frequent and measured distance signals with his bell, as a matter of strict precaution in avoiding collision and to excite the attention of roaders in the vicinity. A moderate speed of riding must be maintained at all times. Cycling at an extraordinary speed, speeding in any form, or "scorching," as it is termed in America, is forbidden on the highways everywhere in Germany. At very steep down grades of the roads the cycler must dismount and guide his wheel until the descent is passed before remounting. Cyclers are also required to dismount at any time if called upon by police officials to do so and are obliged to give to such official any information he may deem necessary to demand. For disregard of any of the above rules and regulations, a fine not to exceed 60 marks ($14.28) may be imposed or imprisonment in jail for not more than two weeks, or both, may be inflicted for each offense.

GEORGE SAWTER,

GLAUCHAU, *October 12, 1896.* *Consul.*

MODIFICATION OF THE GUATEMALAN TARIFF.

I beg leave to inclose copy of a decree which has just been issued by the President of this Republic. This decree places a large number of articles on the free list from February 1, 1897, to June 30, 1897.

The object of this decree is to benefit those who visit the Central American Exposition, which opens on March 15, 1897, and closes July 15, 1897.

D. LYNCH PRINGLE,

GUATEMALA, *October 9, 1896.* *Consul-General.*

[Translation.]

After the 1st of February until the 30th of June of the coming year (1897), the following articles will be exempt from all import duties and all fiscal or municipal taxes:

Codfish, dried or salted herrings, salted fish put up in all kinds of packages, olives in brine or pickle, oil or forced meats in all kinds of packages, capers in all kinds of packages, filberts or hazelnuts; oats, hulled or unhulled; rice, olive oil in different packages, biscuits of all kinds, codfish in all kinds of packages, Catalonian sausage; cocoa (prepared), powder or paste, with or without sugar; shrimps, canned meats (dry or salted), chestnuts, caviar, beer, confectionery and all kinds of candies; barley, hulled or unhulled; all kinds of canned goods not otherwise specified, chocolate of all kinds, pork sausage, dates, meat extracts, vermicelli and macaroni and pastes, dried fruits of all kinds, fruit in sirup or sugar, ginger ale, wheat flour of all kinds, oatmeal; barley, rice, beans, and rye; dried figs, hams (smoked or salted), lobsters, condensed milk, vegetables of all kinds, butter, shellfish, sardines; mustard, prepared or unprepared; nuts, sweet or spiced bread (cake), nutritious pastes of all kinds,

fish, cheese, sago, sausages, refined salt, salmon, sauces, sardines, tea, bacon, wheat, grapes, vinegar in glass bottles, red table wine, beans, pease, potatoes, lard, tubs or water buckets of all kinds, flags, shoe blacking, stoves and all necessary parts, iron beds or cots, beds or cots of brass or bronze; mattresses of wire, iron, or steel; coffee pots, corn meals, wax and sperm candles, broom and whisk brooms; wooden and wax matches, except those of different colors; all kinds of filters.

The above-named articles will enjoy the exercise of the privilege above referred to only when imported through the port of San José and registered in the custom-house of this capital [Guatemala].

SILK FILATURES IN CHINKIANG.

That even in this most conservative of all countries modern improvements are slowly but surely gaining ground is amply proved by the establishment of various industries in Shanghai and other cities and towns known as "outports." In the former place, cotton mills under Chinese management are springing up like mushrooms, and now a determined attempt is being made in Chinkiang to rival Shanghai by the establishment of two silk filatures.

As the province of Kiangsu is a great silk-producing district, and as the filatures which have been established in Shanghai under foreign management for a number of years have been a great success, it is anticipated, not without good reason, that the new ventures in Chinkiang will be equally successful. It is therefore well worth while to know how the Chinese are setting about this task.

Two separate companies have been organized—one under the patronage of Mr. Yen, a wealthy salt commissioner of the neighboring city of Yangchow, and the other under the management of Mr. Ying, a high native official of the same place. Both establishments are situated on low, marshy ground near the British Cemetery, about a mile or something less distant from the concession of Chinkiang, in an angle formed by the Chin San Creek and the Yangtze River. The first is called the Dah Wren filature, and consists of a range of buildings of one floor or story, comprising an engine house, drying room, spinning room, sample room, packing room, and godown, or storeroom. The staff of resident workmen, overseers, and managers are housed in commodious dwellings, and in the same buildings are situated the offices, where a large clerical staff find ample accommodations.

The supply of cocoons, though only to be obtained during two months in the year (April and May), is practically unlimited, coming chiefly from different parts of this province (Kiangsu), but Wusieh appears to be the principal source of supply. The quantity of cocoons required to keep the filature in full work all the year round is estimated at 3,000 piculs (of 133⅓ pounds), of the estimated value of $300,000 (Mexican). It is, however, proposed to start only half the number of spindles until a sufficient number of girls can be trained to carry on the work.

When the cocoons are received, they are at once passed through the drying room to extract all moisture, for which purpose they are placed on large,

wooden frames, with open-work bamboo bottoms, and subjected to heat of a very high temperature. After drying, they are removed to the godown and stored till wanted. When required to be worked up, they are sent to the spinning room, where they are passed through the usual process of steaming and cleaning, and are then reeled off and spun into silk thread. Careful attention is given to the item of waste silk, for which it is expected a ready market will be found in Europe and America. The hanks of silk are carefully examined after leaving the spinning room to separate the different qualities and are then made up in the well-known parcels ready for export.

The complicated machinery has throughout been manufactured by a Chinese firm of engineers in Shanghai on the most approved foreign patterns and is decidedly creditable to Chinese workmanship. The engines are double compound of 8 and 24 horsepower and they set in motion two driving wheels, each 6 feet in diameter. There are two powerful pumps which supply the water for the engines and works, and then two large boilers, with five furnaces, and the whole of the engines and boilers are housed in a building 50 feet square. An iron chimney, built in sections of riveted plates and 90 feet high, is erected near the engine house and, of course, connected with it, which is expected to give better results, both as regards cost and durability, than a brick structure. The water is drawn from a cutting 50 feet wide and 12 feet deep, which surrounds the whole block of buildings and is kept well filled by means of a small canal connecting it with the Chin San Creek. In the very likely contingency of an outbreak of fire, the supply of water would be practically inexhaustible and prove of the greatest service.

The total number of spindles which will eventually be worked is 200 and will give employment to 200 girls and women, and there will be in addition 100 women employed in the process of steaming and cleaning the cocoons ready for spinning. It is expected that the supply of labor will present some difficulty. To cope with this in the most effective manner, 100 trained girls have been employed in Shanghai to teach the young idea of Chinkiang how to spin. The method of teaching requires an application of about twelve months to learn all the mysteries of the trade, and the intellect of the young Chinese women is not quick, so that there may be some delay before the 200 spindles are put in full operation. The girls are drawn from the kuli, or working class, and begin to learn the business at the age of 10 years. They start on wages of 20 cents a day, and these are increased till an efficient worker may receive 50 cents a day—extremely good wages in China, especially for young girls. Working hours are from 6 o'clock a. m. to 12 noon and from 1 o'clock to 5.30 p. m., and they have every Sunday free—a boon the value of which the Chinese appear to be discovering, at least in the cotton and silk industries. It is not a question of religion with the employers, but merely of rest. Except with foreign firms, there is no observance of Sunday as a day of rest in China. The working hours may appear to be very long for children, as most of these employees are, though it must be said that they look healthy and happy and are certainly well fed

and clothed. The wages are, of course, taken by the father and mother, the latter being almost invariably employed in the waste-silk department, with a view to keeping a sharp eye on her offspring, and to the credit of the mothers and daughters it must be said that in spite of the large number of females employed, immorality is at a minimum. Considering the wages paid to the employees—native Chinese—as compared with the wages paid in America or in Europe for similar work, it is not a matter of surprise that the industry should prosper in China.

The Ying Li silk filature, situated close to that above described, is an almost exact counterpart of it, the only difference being that the spinning room is built in two floors, with the intention, if the venture is a success, to start an additional 200 spindles, which, in that event, will lead to a considerable saving in time and money. The chimney of this filature is to be of brick, an ornamental structure 180 feet high—a terrific blow to the superstition of China and in defiance of the Feng Shui, held heretofore in such reverence by the people. But as this building is in the hands of an influential Chinese official, it will be accepted, no doubt, without even a word of protest.

The Dah Wren filature will be in working order about the middle of October; the other not until some months later. One serious item the enterprising managers of these establishments may have left out of account, and that is the exactions of their own Government, which has recently proposed to levy an additional tax of 10 per cent on all cotton and silk goods manufactured for export, and if this is carried out, despite the strenuous opposition of the foreign commercial communities, natives as well as foreigners engaged in these industries may find themselves in a very tight place indeed.

A. C. JONES,

CHINKIANG, *September 7, 1896.* *Consul.*

HEMP CULTIVATION IN BOLOGNA

HEMP CULTURE AND MANUFACTURE.

One of the most important agricultural products of the provinces of Bologna and Ferrara (which are comprised in this consular district) is hemp (Cannabis sativa). Bologna hemp is generally manufactured into yarns and canvas. The Ferrara quality is principally consumed for rope making. The former is a finer fiber than the latter, but not so strong; they are both, however, held in high esteem in textile centers abroad, chiefly in Germany, France, and Spain.

The cultivation of hemp has developed greatly in these provinces, owing to the favorable conditions of the climate and soil, which are not easily found in other countries.

Hemp sprouts at 46.4° F. and thrives well at 73.4° F. From sowing to cutting for fiber, the total amount of heat it requires is 3,812° F. and from

sowing to cutting for seed, 4,892° F. Hemp may be cultivated between the equator and 60° latitude.

Chemically, the land must be siliceous, argillaceous, vegetable, calcareous, and rich in azote of phosphoric anhydrite and potash. Physically, it must be soft, fresh, and deep. Besides, the land must be abundantly manured.

Sowing generally takes place in the spring, owing to the necessity of 46.4° F. of temperature and a moderate degree of humidity. It is preferable to sow by machine. This system saves seed, and the sowing is much more regular. The land must be previously deeply plowed. After sowing, the land requires to be hoed, and much other work is necessary, such as the extirpation of parasitical plants, etc., in order to obtain an abundant crop.

The crop ripens in August or September, according to the weather. It consists of stalks about 3 meters long. These stalks are bundled and placed in ponds, expressly constructed, where they remain about a week in order to ret. They are then dried and scutched by means of a complicated process which produces the fiber ready for the market.

To introduce hemp cultivation into any country, the land chosen for the purpose should have special conditions. Showers are indispensable in March. Wind and hail are its worst enemies. Excessive humidity and drought are also injurious to its vegetation.

HEMP EXPORTS TO THE UNITED STATES.

The certification of invoices of hemp exported to the United States from these provinces, made by this consular agency, show the following amounts: From June 30, 1893, to July 1, 1894, $115,527.10; from June 30, 1894, to July 1, 1895, $235,616.09; from June 30, 1895, to December 31, 1895, $120,957.19.

By these amounts I do not intend to give the exact statistics of hemp exported from the provinces of Bologna and Ferrara to the United States, because, to my knowledge, shippers of hemp of these provinces have forwarded, from time to time, lots of hemp and tow to the United States with transshipment at London and Liverpool without asking the certification of their invoices at this agency, as required by section 641 of Consular Regulations, which should also be observed in the interest of the American purchasers and for the exactness of statistics.

CARLO GARDINI,

BOLOGNA, *October 2, 1896.* *Consular Agent.*

AGRICULTURE AND AGRICULTURAL IMPLEMENTS IN RUSSIA.

Of the articles imported into Russia, agricultural implements and machinery, together with raw cotton, are of the most importance to the United States. Three countries practically furnish the agricultural machines and

implements imported, viz, England, the United States, and Germany. Formerly, England furnished the great bulk of the steam and horse power thrashing machines, engines, harvesters, mowers, plows, etc. At present, the trade with England is confined almost exclusively to steam thrashing machines and engines. Trade with the United States is increasing yearly in harvesters and binders, mowers, horse rakes, and a few other of the smaller agricultural implements. Occasionally steam thrashing outfits find a customer in Russia, but English machines, thus far, have held the field. Germany has increased its trade in agricultural implements very largely of recent years and almost entirely at the expense of England. The trade in horse-power thrashers, plows, and the smaller agricultural implements of German make has greatly increased, with harvesters, binders, and mowers not so much so, but still the trade, owing to the energy displayed by German manufacturers and their agents, is steadily on the increase.

During the past five years American manufacturers of agricultural machinery and implements have taken the proper means to secure for themselves a large share of the trade of this country. They have sent experienced men to establish agencies, and they send yearly a large number of experts to set up new machines and also to look after the working condition of the old ones. This action on the part of our manufacturers has produced excellent results and inspired confidence among the farming population. The field in this direction, however, is scarcely more than touched and nine-tenths of the country is still without modern agricultural machines and appliances. It is one thing to send elaborate circulars and catalogues to a consul for distribution, and quite another, and by all means the most important, to send a good business man with authority to do business and establish agencies.

Russia is essentially an agricultural country; the character of its soil and the topographical formation of its land contribute to make the country, with rare exceptions, a very successful farming country. It grows every known cereal successfully and more cheaply, even with crude appliances, than any other country. Cheap labor largely interferes with the general use of expensive machinery. The difficulties experienced by the peasant farmer in handling complicated machines, like the combined harvester and binder, tends also to keep them out of use. This objection will disappear, and signs are not wanting which indicate that a marked general improvement is taking place among the masses in Russia. The Russian peasant is naturally obedient and shrewd, and it will not take a great deal in the line of education to bring him up to the level of the farming classes elsewhere. The future of improved agricultural implements and machinery in Russia will be a great one, and the field is open to be won.

Manufactured articles of American make, such as locks, knives, pocket-knives, revolvers, etc., are to be found in the shops here, but they are usually purchased from German traveling agents, whose Hamburg houses represent American firms.

Cotton is being successfully cultivated in Russian Turkestan, and the yield is annually increasing. The great bulk of cotton used in Russia must still come from abroad, the United States furnishing the major part.

The quantity of Russian coal consumed is increasing yearly; nevertheless, English coal in large quantities is sold here at a profit. The lack of transportation facilities renders the general or exclusive use of Russian coal an impossibility. This condition will continue to exist until the railways and water courses are sufficiently developed to bring cheap coal in necessary quantities to the consumer. The coal in use here, both English and Russian, is soft coal.

In this country, it is necessary, in order to do business, to give long credit. That this is attended with some risk, is undeniable, but, with reasonable precaution on the part of the seller, the risk is not any greater than is taken in other farming countries. The peasants are becoming the best customers for agricultural machines, and the governing body of the commune of which the peasant forms a part is always ready to give the would-be purchaser rating in his commune and advise whether or not he should be trusted. There are sections of country in which the communes are fairly well to do and even rich, and there are others, again, where they are in debt and very poor. It can not be said that the condition of the agricultural classes in Russia is a prosperous one. But in a country like Russia, where the paternal plays such an important part, debt is not so dreadful a burden as it is found to be elsewhere. The Russian Government, during the past ten years, has remitted fabulous sums, both in interest on mortgages and in taxes, and is engaged at the present time in advancing the farmers, both great and small, large sums of money on their grain in order to enable them to hold their product for a good price in the markets. The rate of interest charged is very low.

Two-thirds of the railways of this country are owned and managed by the Government and the remainder are under its direct supervision and control. Freight rates on all railways, whether owned by the Government or not, are regulated by the Government, and these rates are extremely fair. Cutting rates is not allowed. The carriage of grain by water is very cheaply done, and the Government annually expends large sums of money in improving, connecting, and extending the system of waterways.

The direct relief given to agriculture by the remission of interest and taxes and the loaning of money at a low rate of interest, enabling the farmer thereby to hold his grain for the highest price, is a direct bounty given to agriculture and is a subject well worth the study of governments. The peasant farmers of Russia have but little to say in the general government of the country; nevertheless, their interest and material welfare are made the subject of careful study on the part of the Government and every effort is made to advance their interests and prevent injustice. With the General Government of the country and its policy, the peasantry have absolutely nothing to do. They are not consulted in the choice of their ruler,

nor have they any ambition to take part in the affairs of the Government. They form 90 per cent of the population and are devotedly attached to their country and ruler. No matter what goes wrong, the Russian peasant always believes that the Emperor does not know of it, else it would be remedied. This belief is entertained, also, by a great many people who are of a higher order intellectually than the peasant. There is a powerful body in the country who believe it to be in their interest to keep the Throne and the peasantry as far apart as possible. In any conflict that might arise, the Throne is always sure of the support of the peasantry. This is well known, but it would not serve the purpose of the powerful body mentioned to have any practical demonstration of this fact. Hence, all agree in doing for the peasantry everything possible to aid them in their farming operations.

The manufacturing interests, which have grown enormously during recent years, are protected by a high tariff. The duty on raw cotton and coal is very high, and serves the interest of the cotton planters of Turkestan and the coal miners or owners of the Don and other districts of Russia. A rebate is given on all goods exported abroad which have been manufactured in Russia from foreign cotton.

THOMAS C. HEENAN,

ODESSA, *October 8, 1896.* *Consul.*

MEXICAN TOBACCO.

Ever since the dawning of what the French called "the American epoch" of Mexico there has been a steady and continuous development in the exports of this country. Striking as are the facts with regard to the increase of the cultivation of coffee and the growth in the United States of a sincere appreciation of the Mexican berry and its sterling qualities, these can be paralleled in many points by the development of Mexican tobacco. Although France has not profited commercially by this increase, it is only simple justice to say that it is due very largely to Frenchmen and to the exiles from Cuba whom they employed. A French writer, Louis Lejeune, was the first to point out that the tobacco grown in the upper valley of the Papalvapam River produced leaves as fine, as silky, and even more aromatic and perfumed than those of the "Vuelta Abajo," in Cuba. He showed that the plantations in the Pinar del Rio district of Cuba were exhausted and that not even the most lavish use of fertilizers could enable them to produce leaves of the real Habana quality. He likened the western end of the island of Cuba to a dying fire, where one could find here and there points of living flame, but everywhere else ashes and blackened embers. M. Lejeune, in this pamphlet, made an elaborate comparison of the relative cost of starting a tobacco plantation in Cuba and in Mexico, and showed that, supposing silver to be at par, which it was when he wrote, the expenses in the latter were only one-half of the former, without taking into consideration the prices of land or the cost

of transportation. And he adjured his countrymen who were enterprising not to wander off to Cochin China, but to establish themselves in Mexico on tobacco plantations. Some did so. Messrs. Schnetz & Levy bought land at Santa Rosa and took into partnership a Cuban named Cid de Leon. M. Gabarrot bought a plantation near the Balsa property in the Valle Nacional district, and there have been others who have planted tobacco in the canton of Cordoba, and these have had even better results. At the last French exposition, these gentlemen above named received gold medals for the excellence of their production. Mr. Rivero, of Mexico City, received a silver medal, and Messrs. Noriega and Pugibet bronze medals. Mexican tobacco on that occasion carried off all the honors, and it was universally admitted that practically it was Habana in quality. But, for some reason or other, "La Regie," the special department created in France for regulating the importation and traffic in tobacco did not, until the fiscal year 1894–95, accept Mexican tobacco, and therefore France has lost the benefit to which it was fairly entitled through the energy and skill of Frenchmen who created the initiative which has resulted in ranking the Mexican leaf with the Habana. Prior to 1889, the export of Mexican tobacco rarely amounted to $900,000* in any one year. Then there came a change, as shown by the following table:

Year.	Amount exported.	Year.	Amount exported.
1889–90	$948,332	1893–94	$1,755,314
1890–91	1,105,447	1894–95	1,460,133
1891–92	1,746,928	1895–96	*1,700,000
1892–93	1,459,830		

* Estimated.

The tobacco men of the United States did not realize the changed situation in the Habana cigar business thoroughly until the fiscal year 1891–92. In that year, Mexico exported 867,539 pounds of cigars and cigarettes and 2,565,802 pounds of leaf tobacco. The four principal importing nations were:

Countries.	Cigars and cigarettes.	Leaf tobacco.
	Pounds.	*Pounds.*
England	664,400	231,055
Germany	132,466	1,372,555
Belgium		735,220
United States	35,153	70,107

But two years afterwards, in the fiscal year 1893–94, there was a very different state of things. Mexico exported in that year 794,917 pounds of cigars and cigarettes and 3,568,483 pounds of leaf tobacco.

* The values in this report are given in Mexican dollars, worth 53.2 cents in United States currency on October 1, 1896.

The four principal importing nations were:

Countries.	Cigars and cigarettes.	Leaf tobacco.
	Pounds.	*Pounds.*
England	727,764	180,298
Germany	8,309	1,664,491
Belgium	2,178	1,314,028
United States	35,046	382,767

These figures show variations of production and exportation, but do not explain them. Figures give the effects only, without even a hint as to the causes. If we should congratulate ourselves over the remarkable gains shown in the exportation of leaf tobacco to the United States, we should be in part in error. It is true that the tobacco of Mexico is essentially cigar tobacco and "filler" tobacco; moreover, the extraordinary increase in the figures of 1893–94 over 1891–92 would prima facie signify that the United States, and more particularly New York, was rapidly coming to the front in the manufacture of Habana quality or commonly called "Habana" cigars. For this is what is indicated by the importation by any country of Mexican leaf tobacco. In Cuba, the exhausted soil can give no more and the world's requirements of Habana cigars can only be supplied through the use of Mexican leaf tobacco. At first, foreign nations imported Mexican cigars, but they did not give complete satisfaction, because boxes marked "colorado," "colorado claro," and even the "claro," when opened were found to contain "maduros" and even "oscuros." The supposition was that this was due to negligence in marking the boxes or even to fraud, because the light-colored cigars are preferred as being milder. This was a great injustice to the Mexican exporters, who are most careful on these points. The enigma was solved by the discovery that Mexican tobacco ripened with remarkable rapidity and that "claros" became "oscuros" during the short transit from Veracruz or Tampico to New York. The remedy was clear. It was to import the leaf and manufacture the cigars under climatic conditions that would prolong the ripening process. This led to a very brisk demand for leaf tobacco and the Indians in the tobacco belt of Mexico were so foolish as to add corn shucks, grass dirt, and even stones to add weight to their bales; especially was this so of that bought and shipped to Germany. The consequence was that there was a reaction and the buyers for foreign houses would not look at any tobacco that did not bear the inspection brand of some well-known French, German, or Mexican house. Then the Indian growers were in despair and offered their tobacco for the price of seedling tobacco. American buyers jumped at the price and thus the exportation to the United States for 1893–94 reached the figures of 382,767 pounds, as against 70,107 pounds for 1891–92. But this was not maintained, as the following table will show, for the fiscal year 1894–95. Mexico exported during those twelve months 806,330 pounds of cigars and cigarettes and 2,077,653 pounds of leaf tobacco. When the latter is contrasted with

3,568,483 pounds of the previous year, it will be seen that there is a falling off of about one-half. This is because the sales of the previous year included an enormous amount of unmarketed tobacco which had remained in the storehouses of the planters in consequence of the bales having been loaded for additional weight two years previous.

Countries.	Cigars and cigarettes.	Leaf tobacco.
	Pounds.	*Pounds.*
England	732,514	127,586
Germany	10,584	1,383,470
Belgium	6,721	257,842
France	17,604	12,980
United States	19,275	170,291

The small gain of the United States, as will be seen, is nevertheless sufficient to afford ground for congratulation, and to make probable the hope that at no distant time our country will control the trade in Habana cigars. We have some advantages over our European rivals. We have a constant supply of Cuban and Mexican cigar makers. We have also in the tobaccos of Connecticut and Pennsylvania wrappers of the most splendid appearance, and to look well is all that is required of the wrapper.

In Europe, it has been found impossible to grow any tobacco save light smoking tobacco for the pipe. The attempt has been made to utilize the tobacco grown in France and the valleys of Switzerland for wrappers and the result has been the "Vevay fin cigar"—a very poor cigar. The English have attempted to raise tobacco in India and the result has been the "Trichinopoly cheroot," which, in some respects, is even poorer than the "Vevay fin." Our commercial rivals in Europe in the "Habana" cigar business labor under the disadvantage of being forced to import wrapper tobacco from Sumatra or to use Mexican tobacco for wrappers as well as for fillers. Practically no wrapper tobacco is grown in Mexico. The leaf is all filler. This is a virtue to those who like a strong cigar, easily smoked, but it is a defect for the general consumer, who likes a milder article which he can smoke all day. When cigars were mostly made in Habana the wrapper was "Yara," and not the "Vuelta Abajo" for that very reason. The reason why Sumatra tobacco is used for wrappers is because it is a very mild tobacco of Habana quality raised from seed which the Marquis de Cabañas sent to that island when it became obvious that the soil of the tobacco region of Cuba was fast being worn out. He also sent seed to Java and to the United States, but it was found that it was impossible to raise tobacco of Habana quality anywhere save in Mexico. That raised in Java from Habana seed was very coarse and rank, replete with nicotine and meconic acid and utterly devoid of those delicate essential oils that give Mexican tobacco such an aroma. The Sumatra leaf had the qualities of Habana tobacco, but in the very faintest degree; however, it makes a beautiful wrapper, but adds practically nothing to the quality of the cigar, for the wrapper plays no higher

part than the paper wrapper of a cigarette. A comparison of the prices paid for Mexican leaf tobacco by the various importing countries may be of interest. Germany, the chief importer, pays 37 cents per pound; the United States, 38 cents per pound; England, 39 cents per pound; Belgium, only 29 cents per pound; and France, only 25 cents per pound. It seems certain from this that the "La Regie" of France will continue to deal as heretofore with the State of Virginia. The finest Mexican cigars go to Habana at $1.67 per pound; England gives 94 cents per pound for Mexican cigars; France, $1.10; and the United States, 88 cents. Our high tariff on cigars is such that even at the very low price of Mexican manufactured cigars they can not be handled in the United States except at exorbitant prices.

Salvador, which is now a part of the major Republic of Central America, purchases much of the tobacco raised in the State of Chiapas at the very low price of 13 cents per pound, but it is the misfortune of Chiapas to have no roads or outlet save by the Uzamacinta River. In Mexico, the soil is so deep that it is not necessary to plant a crop of corn after the crop of tobacco, and, instead, the growers raise a second or seedling crop. After the plant has been cut, a stalk or chute springs from the root and grows from 4 to 8 feet in height and seeds abundantly, and from this stalk or chute spring small and very mild leaves, about the size of a man's hand. These are utilized by the manufacturers of cigarettes. To the factories in the country this tobacco is sold at from 2 to 5 cents per pound. This cigarette tobacco is excellent, and its reputation is very great. Colombia and Peru buy it in constantly increasing quantities at from 6 to 9 cents per pound. Costa Rica buys a selected grade at 10 cents per pound; Guatemala buys at 6 cents per pound. All of the Central Americans and some of the South Americans buy the Mexican cigars and pay an average of $1.05 per pound. Their enthusiasm over Mexican cigars is quite as great as that of the Europeans and Americans was over the choicest brands of "Habanas" in the palmiest days of the tobacco business in Cuba. Those who have read the works of Squier and Stevens on Central America must be well aware that tobacco of good quality is raised everywhere in those regions. Their preference for Mexican tobacco is therefore the greatest proof of its superiority that can be adduced.

In a word, Mexico is not only one of the coming coffee countries, but is also a coming tobacco country. Mexico seems soon destined to wear the mantle of Habana in tobacco production, and, once secured, it is safe to predict that it will never pass away, for the soil of the tobacco region is so deep as to be practically inexhaustible, being from 8 to 20 feet in depth, and in some places even 30 feet. Moreover, its extent is probably one hundred times that of the Cuban tobacco region, when we take into consideration the fact that, acre for acre, the percentage of cultivated land at the present moment capable of producing tobacco of the very highest grade is greater in Mexico than it ever was in Cuba in its best days; we can from this easily see what will be the amount produced in the future. Mexico's re-

sources in this direction are practically so great as to make it certain that it will become rich from its tobacco alone. No doubt, the result will be finally to cheapen the "Habana" cigars and put them within reach of all. Mexico will, however, even then raise the tobacco, but the cigars will be made elsewhere. Why should not the tobacco men of the United States see their way to control this business, which is certain to assume colossal proportions?

It does seem clear that if the United States will follow the initiative set by Frenchmen and French writers, the control of the traffic in "Habana" cigars can be centered in the eastern part of the United States. The tobacco lands of Mexico form an immense inverted capital T, the cross stretching from Tuxtepec (Oaxaca) and the upper valley of the Papaloapam through the southern portion of Oaxaca into the Tehauntepec highlands and thence into the State of Chiapas; the upright of the T stretches from the valleys of the Colorado and the Trinidad rivers (which form the San Juan River) eastward to the San Andres Tuxtla Canton. The cream of the tobacco lands will undoubtedly be found in the valleys of the Colorado and Trinidad rivers, but chiefly the latter. The soil in those valleys is from 10 to 15 feet deep and of the very richest quality, and is equally adapted for coffee or tobacco. It may be taken as axiomatic as regards Mexico that the land that is good for one is equally good for the other. This, however, did not prove true in Java, and the tobacco of Java had exactly the qualities and defects of the coffee; thus, mixture is required. To the eastward of the main valley of the Trinidad River, in the transverse valleys, the soil is even deeper than 10 to 15 feet, and here one finds mahogany trees of the most astonishing size and of the finest quality. This region is called Las Monterias de Caoba, and is very extensive. North of the Colorado River, the soil is entirely different, and here is an immense growth of live oaks—Las Encinales. In the open glade, it is probable that sugar cane could be produced as advantageously as in any part of Mexico.

Transportation is one of the most important questions which the planter in Mexico has to consider. In the Trinidad region, he is close to the National Tehauntepec Railroad, and he can also raft down to San Juan Evangaista (Veracruz), which town is reached by the small river steamers that ascend the river from Tlacotalpam. He has two ports—Coatzacoalcos and Alvarado. Whenever the railroad from Cordoba reaches Tuxtepec, it will undoubtedly be extended to Juili, on the Tehauntepec line, and must traverse the Trinidad region, so that, on the score of transportation, one is reasonably assured being amply provided in the present, with the probability of still more accommodations in the future.

For the benefit of our people, it seems to me that a thorough investigation should be made of the Central American part of Mexico in the interest of coffee and tobacco commerce for the United States.

WILLIAM J. CRITTENDEN,
Vice and Deputy Consul-General.

CITY OF MEXICO, *November 12, 1896.*

No. 195——8.

CHANGE IN THE MEXICAN TARIFF.

I have the honor to submit the following report on a Mexican custom-house law, which took effect on the 10th of this month.

The regulations of the new tariff law are as follows:

All products of the "zona libre," similar to imported foreign articles, have, when transported to the interior of the Republic of Mexico, to pay the full duties, just as the imported goods.

The enforcement of this new law has been watched with keen interest by the people of the "zona-libre" district, and is considered a crushing blow to the privileges which they have so far enjoyed. The new law, however, is of great benefit to the commerce of the United States. The result will be that the natural products of the "zona libre" of Mexico will have to be exported to the United States, if the market there is better than in the interior of Mexico, where the full duty is exacted. Furthermore, it places the American products for exportation to Mexico on an equality with the products of the "zona libre," the latter being, up to the time when the new law was issued, free from duties to the interior of the Republic of Mexico.

I annex hereto a list of the natural products of the "zona libre" which are principally affected by this law, and which can hereafter be imported from the United States to the interior of Mexico with more profit than from the "zona libre."

Articles.	Unit.	Duty.
Corn	100 kilograms	$0.60
Wool	Kilogram, net	.08
Cotton with the seed	Kilogram, gross	.03
Cotton	do	.07
Piloncillo (brown sugar)	do	.15
Frijoles (Mexican beans)	do	.05

The enforcement of this new law actually closes the market against the products of this "free zone." Vigorous protests have been forwarded to the Mexican Government, but, so far, the new law is rigorously enforced.

The principal products of the free zone formerly transported in large quantities to the interior of Mexico have been as per foregoing list, also live stock, for which the new law has not as yet a fixed tariff. The table gives the full duty exacted on mentioned articles, either from the "zona libre" or from foreign ports.

The present duty on corn (60 cents per 100 kilograms) is a reduction on the former tariff, allowed by the Government to assist the people, as the corn crop has been a failure in nearly all sections of Mexico. The result of the somewhat liberal act of the Government is that enormous shipments of American corn into Mexico are taking place, in anticipation that in the near future the old tariff on corn may be enforced again.

J. BIELENBERG,

MATAMOROS, *October 29, 1896.* *Vice-Consul.*

NEW ENTERPRISES IN TAMAULIPAS.

I consider it my duty to inform the Department of some new enterprises, which may develop into a large commerce with the United States, and principally for this consular district.

RAILWAYS.

A new railroad concession has just been granted by the Mexican Government to the State government of Tamaulipas. I have been informed, upon good authority, that this concession is for the construction of a broad-gauge road from San Miguel, in Camargo, to San Juan, a station on the Gulf and Monterey road, the Federal Government paying $5,000 (Mexican) cash subvention per kilometer (0.621376 mile).

This road, if built, would bring Matamoros in direct connection with the main lines of Mexico, as the Mexican National Company has now a narrow-gauge road running from Matamoros to San Miguel, and it is expected that if Matamoros has direct communication with the interior of Mexico it will call for a railroad from Brownsville, Tex., to the nearest point of the American system of roads, either San Antonio or Alice, Tex.

MINERAL TAR.

Long before taking charge of this consular office, a Mexican landowner called my attention to the wonderful resources of his land, which he claimed to be petroleum, and, upon my request, he forwarded samples to me. I had them analyzed in the State University of Texas, which pronounced them very rich as a natural mineral tar, but not, in reality, petroleum.

I concluded to make a trip to the land, and last June I started with Mr. W. S. Scott, of California, who was sent by ex-Governor Ross and J. F. Harris, of Texas, to accompany me and investigate.

Our trip was very tiresome, over a hard road of about 300 miles, through a country very little settled, until we reached the ranch, where we found one of the richest asphalt fields known, and about twenty wells, which have a continuous flow of mineral tar, as the analysis calls it. The ground for over 20 miles square is covered with asphalt deposits. The near-by streams have the whole year round a fatty, oily substance flowing into them from the surrounding mountains, making the water unfit to drink. From all indications, there must be a large deposit of petroleum and coal under this asphalt field.

I was instrumental in obtaining from the owners a concession, or lease, for the working of these fields for fifty years, and a company is now being organized in the United States to commence work, put machinery on the ground, and drill for oil.

Besides opening up a market in the United States for the sale of asphalt on a large scale, the land being situated near the coast line, in the district of Sota de la Marina, transportion can be effected by water. The River

La Marina flows through the land and is navigable for vessels of 30 tons capacity.

WOODS.

I could report more extensively on the resources of this land, which consists in the abundance of real black ebony, mahogany, and dyewoods of the finest class. A concession for the cutting and exportation of these woods will perhaps soon be granted. It may promote the trade with the United States, as I consider the exchange of products, where there is a demand between two countries, the real foundation of commerce.

J. BIELENBERG,

MATAMOROS, *October 29, 1896.* *Vice-Consul.*

SPANISH ONIONS.

I have received some inquiry relative to the cultivation of the Spanish onion. It seems the onion of this vicinity is superior in point of flavor and less offensive in point of odor, hence the query addressed to this office.

In the first place, the ground is thoroughly worked and fertilized, after which the seed is sown broadcast. November is the month chosen in this climate for that purpose. Through the winter the ground is carefully weeded and regularly watered, until March, when the sets are culled and reset in ridges or hillocks; the latter is claimed to be preferable. The onion does not lack room for development, for between each set they allow at least 6 inches space. The ground is thoroughly watered every eight or ten days, and after each watering the field is carefully worked with hoes in order to keep it free from weeds and to prevent the ground from crusting; in fact, the onion bed receives as much care as the flower bed.

A clayey soil containing lime, chalk, and iron is the best for the Spanish onion.

I see no reason why the Southern States—some parts at least—could not successfully cultivate this onion. They have the climate and in many parts the same kind of soil.

ANDREW F. FAY,

DENIA, *September 12, 1896.* *Consul.*

OUTLOOK FOR LIFE INSURANCE IN GERMANY.

Germany's forty-two life insurance companies, says a writer, have had, during the last few years, unprecedented prosperity. Well they might. "Favored," says this writer, "by the ever more and more active interest of the people, and not less by the Government's policies, in the matter of exempting insurance premiums to a certain figure from taxation, most of the companies have expanded their business beyond what they were wont to look upon as possible. In 1895, there was an increase in the number insured of

134,725, for a total of 500,000,000 marks ($119,000,000); in 1890, the increase was 105,513 persons for 372,000,000 marks ($88,536,000)." This the writer attributes to the hardest and most energetic work on the part of the companies. He asks the question whether this form of looking out for rainy days has not reached its highest possible point, and then suggests danger to most of the companies should the number of those insuring diminish. To get a good idea of the Empire's possibilities in insurance, one has only to examine the results of an industrial census taken June 14, 1895. A comparison of the figures representing persons insured with the figures representing those who might be insured gives surprising results. The number of persons in the Empire insured December 31, 1895, was 1,460,000. Taking for granted that each merchant, manufacturer, clerk, official, etc., is able to take out an insurance, the companies have still a large field to cover, for the census shows 2,600,000 independent people engaged in industrial life and 520,000 technicians, clerks, etc.; in agricultural pursuits, 2,576,000 independent persons and 96,000 officials, besides 1,426,169 persons actively engaged in earning a living. "According to these figures," says the writer, "Germany has at least 6,000,000 persons capable of carrying life insurance. Between these and the 1,460,000 insured lies a vast field for the energies and enterprise of the companies. Most of the persons possessing intelligence enough to see and appreciate the benefits of insurance are already insured. The movement now must be made among the masses of the agricultural classes, for a very large part of the industrial population is insured." Luckily for the companies, Germany is changing rapidly from an agricultural to an industrial state. Thus, the number of those coming up for insurance is on the increase. To all these factors must be added the fact that certain insurance companies, among the world's most enterprising and energetic, have been forced to leave Germany. How much this has helped swell the figures of 1895 must be left to conjecture.

J. C. MONAGHAN,

CHEMNITZ, *October 17, 1896.* *Consul.*

GERMAN LABOR UNIONS.

Fifteen years ago, the Union of German Commercial Clerks was founded in Leipsic. Its daily increased membership have formed so strong an army of the laboring classes throughout the Empire that the movement is to-day upheld, considered, and recognized as a power by the Government and in all state affairs. The object of this great representative of so many united forces of labor is to promote and further the interests of its large body of members in every possible way—socially, economically, and even, in a moderate degree, to caring for them, when the case so demands. By going hand in hand with the principals, the union has amicably succeeded in winning numberless advantages for its members, having convinced the majority of the Corporation of Merchants of the necessity for reform labor, inciting their

interest into examinations of the conditions and surroundings of their employees, as well as reminding them of their individual duty to those in their service. The members of the union are in turn advised of their duty in conscience to employer, and the whole return is a happy combination of good result in satisfactory labor. The alliance keeps the middle road of political economy on the questions of the day, adopting that branch of philosophy which discusses the sources and methods of material wealth and prosperity in a nation. It has attained great success in claims for higher wages, reduced hours of labor, and better sanitary conditions and surroundings for clerks and the trading classes, and at the present time has outstanding many test claims of whose ultimate fulfillment the union seems confident. The union consists of a united force of 47,000 members, composed of about 300 supporting chambers of commerce and 300 district unions, which proves that its endeavors find approbation and furtherance. This organization of German commercial clerks not only understands how to lay and effectuate claims with regards to its social relations, but its members and administration have also, on every side, strenuously endeavored to contribute to the improvement of their economic situation. From an annual assessment of 3 marks (71 cents), agencies have been established for procuring situations for the unemployed and securing legal service and protection for those members of the union who require it. At the situation agency, 17,000 positions were filled in the last ten years. In the past year alone, services were found for 1,366. Every week, there appears in the organ of the union, die Verbandsblättern für Kaufmännische Reform, a list of 500 open situations. In the legal protection bureau (Rechtschutz), about 300 lawsuits were successfully carried and thousands of questions touching upon law answered. Aid was granted in 614 cases, which included an expenditure of 30,500 marks ($7,259). Besides all these benefits, the union has an insurance fund against age and infirmity and for the widows and orphans of members, with a capital of 450,000 marks ($107,100), out of which, up to the present time, 3,500 marks ($833.09) has been paid in annuities; an established Krankenkasse, or sick fund, with a capital of 1,654,000 marks ($393,652), out of which aid has been granted to 16,000 members to date and never has the yearly assessment of 3 marks (71 cents) been increased. The organization maintains in active service, fifty-three officers stationed at the central bureau, a magnificent building owned by the union opposite the imperial court in Leipsic, besides eighteen officers divided among twelve independent bureaus at Berlin, Breslau, Chemnitz, Dresden, Frankfort, Halle, Hamburg, Hanover, Cologne, Magdeburg, Munich, and Nuremberg, not including a large number of extra bureaus, presided over by nonprofessional temporary officers.

GEORGE SAWTER,

GLAUCHAU, *October 5, 1896.* *Consul.*

NOTES.

Persian Rugs for the United States.—Consul Leo Bergholz, of Erzerum, in his report to the Department upon the trade of that place during the year 1895, writes as follows concerning Persian rugs:

Without doubt, nearly $2,000,000 worth of rugs pass through here annually. Duty can be paid either in cash or kind. Such rugs as are accepted by the customs in payment of duty are sold at auction, and, occasionally, very valuable rugs can be thus purchased at low prices. Most of the American houses dealing in rugs, especially those rugs known under the general head of Persian and Anatolian, buy through agents at Constantinople, and by the time the rugs reach the United States the commissions of these middlemen are added to the cost. It would prove more profitable if such houses would buy direct from the importers in this city.

Persian Trade and Currency.—Vice-Consul-General Tyler, of Teheran, in his annual report to the Department of State upon the trade and industries of Persia, concludes with the following paragraph:

The disorganized state of the currency, following on the depreciation of silver and an extravagant coinage of copper, has placed the trade of the country in a very unsettled condition. Only those who, from long experience, can, within certain limits, forecast the fluctuations of the future, have the courage to risk their capital where the probabilities of loss are so many. If the problem of restoring the former equilibrium is to be solved, it seems that it will have to be done with foreign capital and intelligence.

American Citizens in Palestine.—In a report to the Department of State, dated Jerusalem, October 7, 1896, Consul Wallace makes the following reference to American citizens:

From the consular records, it appears that there are 530 citizens of the United States residing in Palestine. Of this number, 438 are Jews, who are only nominally Americans, having lived in the United States just long enough to obtain citizens' papers and passports. The majority of these emigrated from Russia to the United States and thence to Palestine. Of the other 92 American citizens, nearly all have come here because of peculiar religious views, and among them may be found all possible shades of Christian beliefs. The one idea which seems to possess all, to a greater or lesser degree, is that of the second advent of our Lord. This is by all considered to be an event

soon to take place in Jerusalem. Some of them, during the period of waiting, are suffering for the necessaries of life, but are content to endure privation in the hope of being present and witnessing the Lord's coming. The Spoffordite colony, or "overcomers," as they call themselves, have recently been increased by an addition of 117 Swedish Americans, mostly from Chicago. Just how many of these are citizens of the United States, the consulate is not informed, because of their refusal to register. The leader, Mrs. Spofford, lays claim to prophetic powers and, claiming to be under the direct protection of the Almighty, is averse to having any human power interfere. As they are a peaceable and law-abiding community, or have been for some years, the consulate has not been called upon in this regard.

Mines of the Argentine Republic.—Under date of Buenos Ayres, October 9, 1896, Minister Buchanan reports, as per information received from the director of the Department of Mines and Geology that, according to the most reliable data his Department had been able to secure, there were taken from mines in the Argentine Republic during the last year 473.86 kilograms of gold, 10,210 kilograms of silver, and 389,900 kilograms of copper. The countries to which this output was exported were Germany, England, France, Belgium, and Italy. It is confidently believed, however, by the director, that the mineral output of the country was very much greater during the past year than the above figures would seem to indicate. Constant efforts are being made to locate new and profitable mining possibilities in many parts of the Andes and a renewed interest in mining is being manifested on every hand.

Quick Freights between the United States and Mexico.—Under date of October 21, Vice-Consul-General Crittenden, of Mexico City, makes the following report:

In order to facilitate the shipment of oranges to the United States and thus reduce the loss by decay to a minimum, the Mexican Central and the Atchison, Topeka, and Santa Fé railways have entered into an agreement (to last during the orange season) to run through fast freight trains twice a week from the City of Mexico to Kansas City, Chicago, and St. Louis. This train will make Kansas City in about six days and St. Louis and Chicago in about six and a half to seven days—a clear saving in time of nearly forty-eight hours over the time previously made by them. It will not only carry oranges from this city and the adjacent territory below, but also from La Borca and Guadalajara, whose output and quality equal that of any district in Mexico.

Nicaragua Government Loan.—Mr. Baker, chargé de affaires ad interim at Managua, transmits the following:

The Government of Nicaragua issued a decree on October 30 calling for a voluntary loan of $500,000. It will accept one-half of that sum in cash

and the other half in papers representing the public debt. These papers were issued during the administration of President Sacasa and also by the present administration to pay the expenses of the wars of 1893, 1894, and 1896. For the payment of this loan, the Government will issue orders to bearer to be used in paying custom-house duties. These orders will not bear interest and will be accepted at the custom-houses in the proportion of 10 per cent on the import duties. After the custom-house orders issued in May, 1895, are paid, then 20 per cent of this last Government bond issue will be required when payments are made at the custom-houses. Those who pay their import duties in cash alone, not offering the proper proportion of the new bond issue, will be assessed 4 per cent additional on the import duty while the 10 per cent clause is in operation and an 8 per cent tax when the 20 per cent plan goes into effect.

Liberian Coffee.—Under date of Monrovia, September 25, 1896, Consul-General Heard reports the following relative to Liberian coffee:

The producing and exporting of Liberian coffee is becoming a subject of great concern to the farmers of this Republic. The phenomenal increase in its production is worthy of consideration. The coffee exported during the fiscal year 1886 amounted to 600,000 pounds, while the exports for the year ended June 30, 1896, amounted to 3,000,000 pounds. Farmers, merchants, and people generally have turned their attention to coffee growing. While no American ships touch at any Liberian port, yet more than one-fifteenth of the coffee produced is shipped to the United States via Liverpool. Coffee is the largest export, yet palm oil, palm kernels, piassava, and rubber are shipped in great quantities. If ships from the United States touched at Monrovia, Bassa, and Cape Palmas, half of the imports would be American, and in turn the exports would go to the United States. The people prefer American produce, save the few Europeans residing here. The reason for this preference is that the people are immigrants from the United States and in habits and life are American. A direct line of steamers from New York or Boston, touching at this port once in two months, would be a paying enterprise.

Spanish Hams and Sausages.—Under date of October 20, 1896, Consul-General Bowen, of Barcelona, reports as follows:

Comparatively little pork in any form is exported from Spain. Almost everywhere throughout the peninsula only enough is produced for local consumption, but in Estremadura, Catalonia, Navarre, and the Balearic Islands much is sent to the other provinces of Spain and some is exported to the colonies and elsewhere. Estremadura's principal market for pork products is Madrid. Navarre sends its surplus pork products to Aragon and Catalonia. The Balearic Islands export them to nearly all the provinces of the peninsula and have acquired much fame for their sausage called "sobresada."

Catalonia, however, is the principal pork district of Spain, and its pork houses in Vich, Barcelona, Berga, Caserras, Bagá, and Castelltersol do a large and extensive business. In Vich, there are five factories, furnished with excellent machinery for salting meats and preparing sausages. Their yearly production amounts to 650,000 kilograms (1 kilogram=about 2⅕ pounds), valued at 3,250,000 pesetas (about $541,000). These Vich sausages are ubiquitous in Spain. They appear on the table, cut in slices about the size and shape of a silver half-dollar, but much thinner. They are supposed to stimulate the appetite and to give an adscititious relish to the subsequent viands one consumes. Attempts have been made to introduce American hams and sausages into Spain, but, owing to the heavy duties and perhaps, also, to differences in taste, they have not been successful as yet. Yorkshire hams are the only foreign hams well known in Spain, but even they are imported only in very small numbers. While it is doubtful that American sausages will ever find a market in Spain, there seems to me much hope for American hams (and also lard), for they are much better than Spanish hams.

Tax on Playing Cards in Germany.—Under date of October 9, 1896, Consul Johnson, of Stuttgart, reports:

During the fiscal year 1895–96, 4,483,641 packs of cards of thirty-six cards each and 158,633 packs of over thirty-six cards paid a tax. Of these, 467,416 packs were exported; but we find, however, 36,633 packs to have been imported. During the year, 4,117,348 short packs and 74,143 full packs were used in the Empire, or about one pack of cards to each twelve inhabitants. The tax on playing cards sold in Germany being 50 pfennigs (11.9 cents) on each pack of fifty-two cards and 30 pfennigs (7.14 cents) on packs of thirty-six cards, we find the imperial revenue received 1,272,275.90 marks ($302,801.66) from this source during the year.

Silk Conditioning in Japan.—Under date of August 25, 1896, Consul-General McIvor, of Kanagawa, reports that, in accordance with the provisions of a law enacted by the Imperial Diet of Japan, silk-conditioning houses have been established in the open ports of Yokohama and Kobé, under Government control, the management of the institutions being assigned to the Department of Agriculture and Commerce.

Numerous complaints have been made in the past that raw silk delivered at the open ports was not up to standard in fineness nor in weight, and that such defects could be easily concealed on inspection by careless purchasers. The Government, apparently feeling that there might be some ground for these complaints, and fearing that the trade in raw silk, which is one of the heaviest articles of export, would be affected, introduced and passed a law for the establishment of two silk-conditioning houses, which would inspect

and furnish a certificate on each consignment. Both of these institutions have been opened and are now in operation. Their use is not compulsory and no charge is made for the examination or the certificate.

Ivory Market of Antwerp.—Under date of October 7, Consul Johnson, of Antwerp, supplies the following statistics:

The statistics for the year 1895 show that Antwerp has taken the first place in the world as a market for the importation and sale of ivory, the figures having passed those of London for the first time. The following are the importations since 1890:

	Kilograms.
1890	77,500
1891	59,500
1892	118,000
1893	224,000
1894	264,500
1895	362,000

With the exception of 2,000 kilograms, the entire importation for the year 1895 came from the Belgian Kongo.

Increase in the Tariff of Antigua.—In CONSULAR REPORTS No. 188, the Antigua tariff for 1896 is printed, page 117. On September 11, 1896, the following additional duties were added:

From and after the coming into operation of this act an additional duty of 33⅓ per cent of the amount of duty payable under the provisions of "the customs tariff act, 1896," shall be paid into the treasury for the use of this presidency upon all goods of the respective classes, kinds, and descriptions mentioned in Schedule B of the said act, when imported into this presidency.

This is to continue in force until January 31, 1897.

American Glucose in Austria.—Under date of November 7, 1896, Consul-General Judd, of Vienna, transmits the following:

I have the honor to call the attention of the Department to an intended tariff measure preventing further importation of glucose into Austria-Hungary. All producers of glucose in Austria have formed a trust. The market price of sirup has been made by them 21 florins ($8.44) per 100 kilograms (220.46 pounds). This price has enabled American producers to sell their sirup, which is even better in quality, at a lower figure. The trust, seeing themselves undersold, have now urged the Government to assist them and have succeeded in their efforts. The duty on glucose or sirup has been 6 florins in gold* ($2.99) on 100 kilograms (220.46 pounds). On the 1st of

*The gold florin, in which import duties are paid, is valued at 48.2 cents; the florin in general commercial estimates is valued at 40.2 cents.

December next, a new tariff rate will be published, the law to go into effect next January, making the duty 15 florins in gold ($7.23). This rate is on glucose from all countries, but it is aimed only against the United States, for it is only with sirup coming from our country that the sirup trust (home producers) can not compete. American sirup is sold, landed in Hamburg, per 100 kilograms at 12.50 marks ($2.97½). The import duty for Austria being also 6 florins in gold ($2.99), and freight from Hamburg to Austria amounting to about 1 florin, makes the entire cost of 100 kilograms of American sirup landed in Austria about $6.40, against the trust price of sirup of 21 florins ($8.44). This new duty will at once shut us out from further sale of sirup. It has been this way with other articles for which Americans found a foreign market. If it was not a tariff measure, some other obstacles have crippled their efforts to maintain the trade.

Swiss Vintage of 1896.—Consul Ridgely writes from Geneva, October 27, 1896:

In view of the fact that it has been published in the United States and elsewhere that the vintage of 1896 in French Switzerland has been largely destroyed by the continued and excessive rains, I have the honor to report that, after an investigation of the matter, I find that the vintage is much superior to the general expectation and understanding. Since the early part of April rain has fallen almost daily in Switzerland. In May, June, July, and August, there were in all, in French Switzerland, perhaps not more than fifteen days of bright, sunny weather, and September and October have kept up the same record of almost ceaseless rain and wind. Local records fail to show any similar visitation of bad weather. It will, therefore, in view of these conditions, interest grape growers in the United States to know that the vines have not only not been ruined, but have suffered little from mildew and that the crop of grapes, as well as the vintage, will be up to the average in all the large wine-producing cantons of French Switzerland, viz, the cantons of Geneva, Vaud, Valais, and Neuchâtel. This is due to the fact that the ravages of the mildew were combatted by the "sulfatage" of the vines—that is to say, by sprinkling the vines with a solution of paste composed of flowers of sulphur, quicklime, and sulphuric acid.* This measure was rendered obligatory by law and was everywhere successful. The phylloxera has also made its appearance, but is progressing slowly on account of the unfavorable condition of the soil, as well as because of the energetic measures taken to combat it, and there is little to be feared from it now. Toward the end of August and in the early part of September, an altogether new vine disease made its appearance in many of the great vineyards of the canton of

*The exact composition of the preparation above referred to is as follows: Four hundred grams of flowers of sulphur and 175 grams of quicklime are boiled together for an hour in 4 liters of pure water, and then left to settle. Then, to this solution, is added a mixture of 200 grams of sulphuric acid and 4 or 5 liters of water. This mixture must be made in the open air, and is then once again put into 250 liters of water, after which it is ready for use in the form of a milky liquid.

Vaud. This disease is similar to the black rot and has been given the name of "brown rot." Its appearance is attributed to the wet season, and it has not yet wrought serious damage. I present these facts as evidence that a good crop of grapes and an excellent vintage may be produced even in the very wettest season, which has not heretofore been the experience of grape growers in Switzerland. Swiss champagne, which is made almost exclusively in the canton of Neuchâtel, has recently begun to find a large market in England. The vintage this season will be quite up to the average in spite of the weather.

Swiss Exposition of 1896.—Consul Ridgely, of Geneva, reports, October 27, 1896:

The Swiss National Exposition, which was held at Geneva from the 1st of May to the 18th of October, inclusive, of the current year, was conducted at a great financial loss. The confederation subscribed 1,000,000 francs and the city and canton of Geneva provided a guaranty fund of 500,000 francs. In addition, the exposition company issued 500,000 francs in stock, which was subscribed to by various patriotic citizens. All this has been swallowed up, and there is still an estimated deficit of from 100,000 to 300,000 francs, which is to be covered by the profits of a national lottery, to be drawn the last part of November. The financial failure of the exposition was due entirely to the spring, summer, and autumn of unprecedented bad weather. The exposition was inaugurated in a storm of wind and rain on the 1st of May and was closed on the 18th of October attended by the same unfavoring elements. During the entire season, there were only a few days of good weather, and the whole country became in consequence more or less dispirited. Thus, it happened that Switzerland's greatest national industrial enterprise was a signal financial failure. In all other particulars, however, the exposition was a splendid success. The displays were thoroughly representative of the mechanical industry, as well as of the agriculture and art of the country, and were made on a scale of lavishness that would have done credit to a much larger and richer nation.

Opening for American Beef in Switzerland.—Consul Germain writes from Zurich, November 10, 1896, that the federal Department of Agriculture of Switzerland, owing to the contagious foot-and-mouth disease at present prevailing among neat cattle in Austria-Hungary, issued a proclamation November 9 prohibiting the import of Austro-Hungarian neat cattle into Switzerland from and after November 12, 1896, and until further notice. Austria-Hungary, being one of the main sources of the Swiss beef supply, adds Consul Germain, it becomes evident that some country will have to supply the shortage thus created. Now or never, it seems to me, would be the time for American cattle men to make an effort to introduce American

beef into Switzerland. It must be remembered, however, that France and Italy are ready and able to supply this shortage, and if our people want a share of this trade they must bring their cattle over here, for no Swiss butcher or cattle dealer will venture to buy animals in America and bring them over at his own risk and expense. If anyone concludes to make shipments, and I am advised of the fact, I shall promptly inform the Butchers' Association of Switzerland, who no doubt will avail themselves of the opportunity and buy the cattle delivered either at an European seaport or at stations in Switzerland.

Demand for American Tin Plate at Geneva.—Consul Ridgely writes from Geneva, November 13, 1896:

There is evidence of at least a small demand in Geneva for American tin plate—that is to say, for the raw material packed in boxes; also, for black sheets packed in bundles. If any American manufacturer of this material will send, as early as possible, price list and terms to me, I will endeavor to put them in the hands of at least one intending purchaser.

Profits from the Swiss Alcohol Monopoly.—Consul Germain, of Zurich, informs the Department, November 10, 1896, that the budget for the Swiss alcohol traffic submitted to the Swiss Federal Assembly by the federal council shows estimated total receipts of $2,516,000; expenditures, $1,322,400; an excess of $1,193,600, and a disposable profit of $1,070,000. This profit, about 36.4 cents per capita of the population, is divisible among the various cantons.

Opening for American Wheat in Greece.—Consul Horton writes from Athens, November 7, 1896:

Only about one-third of the wheat consumed in Greece is raised in this country, the other two-thirds being imported from Russia, Roumania, and Turkey, to an annual value of over $3,000,000. The wheat crop of Russia this season has been the worst that has been experienced in years, and, in consequence, prices are high here, and are likely to rise even higher. The quality in general use is quoted at 42 lepta (4.77 cents) per oke (2⅝ pounds) cash one month after arrival, with 3 per cent discount, or net at three months by acceptance. Import dues are 6½ lepta (0.0088 cents) per oke. The quality most in favor here has a long, hard, full grain, suitable for the making of meslin. The finer grades, and especially the soft kernel, are not much sought after. I have talked with several people here as to the practicability of importing wheat from the United States. Among parties with whom American exporters can correspond on this subject are Mr. Christo Kastrioti, banker and wheat merchant, Piræus, and Gregory Empedocles & Co., bankers and importers, Athens. Mr. Kastrioti suggests that samples of the hard grades grown in the United States be sent to him, enough to experiment

with at a flour mill. This merchant gives orders for 2,000 tons and upwards. If samples are sent here, I will personally superintend the experiments at the mills and will report as to results. I am certain that the United States can supply wheat to this market in the Levant, if not to others, if our exporters will take the trouble to acquaint themselves with the quality demanded here. Freight would be greatly reduced if an order could be secured sufficiently large for an entire cargo, which could be sent directly here. I am indebted to Mr. N. Sourmely, commission merchant, of Piræus, for his cooperation in this matter.

Suspension of Duties on Lard in Nicaragua.—Consul Wiesike, of Managua, notifies the Department, November 8, 1896, of a decree of the Government of Nicaragua which rescinds the duties on imports of lard for the next six months. The decree, adds Consul Wiesike, was published too late in the official paper to give me the opportunity to send a lengthier report on it with this mail, and the time of six months allowed by it for the free import of lard is very short for American packers who wish to extend their business relations to Nicaragua, but I am satisfied that the decree will open a market for American lard in this country. The decree, translated, is as follows:

The President of the State, in consideration that the scarcity of lard has caused a very high price for this article, which is a necessity of life for the poorer class of people and ought to be within their reach, has, by the power invested in him, enacted the following: "During the next six months after the publication of this decree the duties on importation of hog lard to this country shall be rescinded."

The Most Expensive Product in the World.—As a matter of curiosity, says Consul Morris, of Ghent, November 12, 1896, I forward the following translation of a statement recently published in European newspapers showing the article which, it is claimed, sells at the highest price in the world:

What is the most expensive product of the world, inquires Mr. Wilfrid Fonvielle? He answers, It is charcoal thread (filament de charbon), which is employed for incandescent lamps. It is, for the most part, manufactured at Paris and comes from the hands of an artist who desires his name to remain unknown in order to better protect the secret of manufacture. It is by the gram (15½ grains) that this product is sold at wholesale. In reducing its price to the basis of pounds, it is easily found that the filaments for lamps of 20 candles are worth $8,000 per pound, and that for lamps of 30 candles they are worth $12,000 per pound. The former have a diameter of twenty-thousandths of 1 millimeter (1 millimeter=0.0394 inch) and the latter four and one-half thousandths of a millimeter. The filaments for lamps of 3 candles are so light that it would require nearly 1,500,000 of them to weigh a pound. As the length of each of them is 10 centimeters (3.937 inches), their total length would be 187 miles.

How to Extract Salt from Marshy Land.—In reply to an inquiry, How to extract salt from marshy land, writes Consul Downes, of Amsterdam, November 18, 1896, I have received the following from an expert: First, the marsh must be well trenched and thoroughly drained; then it must be covered

with grass and clover seed. A fine pasture will be the result. It must be used for pasture land for sheep for five years. On it, the sheep will thrive and fatten most satisfactorily. The experiment of plowing and sowing as soon as the marsh is drained has proved too expensive and the resulting crops very poor. Those who used the drained land for five years for sheep pasture and then plowed and planted, in the following order, viz, rape seed, wheat, oats, flax, beans, barley, caraway seed, pease, etc., have reaped profitable harvests.

Japan Relinquishes Manufacturing Privileges in China.—Minister Denby, under date of Peking, October 20, informs the Department of State that the Japanese Government, on the 16th of October, officially and formally renounced that part of clause 4, Article VI, of the Shimonoseki treaty between Japan and China at the close of the recent war, which provides that all articles manufactured by Japanese subjects in China shall, in respect of inland transit and internal taxes, duties, charges, and exactions of all kinds, and also in respect of warehousing and storage facilities in the interior of China, stand upon the same footing and enjoy the same privileges and exemptions as merchandise imported by Japanese subjects into China.

Consular Reports Transmitted to Other Departments.—The following reports from consular officers (originals or copies) were transmitted during the month of November to other Departments for publication or for other action thereon:

Consular officer reporting.	Date.	Subject.	Department to which referred.
Paul Wiesike, Managua	Aug. 26, 1896	New tariff of Nicaragua for wines, etc.	Treasury Department.
Andrew F. Fay, Denia	Sept. 12, 1896	Spanish onions	Department of Agriculture.
L. L. Stang, Saigon	Sept. 19, 1896	Rice	Do.
James C. Monaghan, Chemnitz	Oct. 17, 1896	Condition of German note banks.	Treasury Department.
James B. Taney, Belfast	Oct. 17, 1896	Potatoes	Department of Agriculture.
H. W. Bowen, Barcelona	Oct. 3, 1896	New taxes in Spain	Treasury Department.
M. Berolzheimer, Vienna	Sept. 11, 1896	Crops of Austria	Department of Agriculture.
John Karel, St. Petersburg	Sept. 26, 1896	Wheat crop of 1896	Do.
Eugene Germain, Zurich	Aug. 27, 1896	Switzerland's cattle imports	Do.
James C. Monaghan, Chemnitz	Oct. 1, 1896	Fruit culture in Germany	Do.
Do	Sept. 24, 1896	World's sugar crop for 1895-96	Do.
A. J. Patterson, Demerara	Aug. 31, 1896	Sugar crop of British Guiana	Do.
H. L. Washington, Cairo	Sept. 8, 1896	Prospects for the cotton crop of Egypt.	Do.
A. D. Piatt, Dublin	Sept. 9, 1896	Agricultural statistics of Ireland.	Do.
Claude Meeker, Bradford	Oct. 7, 1896	American wool in Bradford	Do.
J. H. Thieriot, Freiburg	Sept. 18, 1896	American horses in Germany	Do.
H. J. Sprague, Gibraltar	Aug. 31, 1896	New docks at Gibraltar	Navy Department.
Perry Bartholow Mayence	Oct. 24, 1896	Manuring irrigated meadows	Department of Agriculture.
A. D. Dickinson, Nottingham	Nov. 10, 1896	Spread of tubercular infections of milch cows.	Do.
Do	Nov. 10, 1896	Prospective hop crop	Do.

FOREIGN REPORTS AND PUBLICATIONS.

British Trade Returns.—The accounts of trade and navigation of the United Kingdom for the month of October and for the ten months ended October 31, 1895 and 1896, make the following showing of British imports and exports:

Imports.

Articles.	1895.	1896.	Increase.	Decrease.
Month of October.				
Animals, living, for food	£4,698,103	£4,255,074		£443,029
Articles of food and drink:				
Duty free	60,395,872	66,260,455	£5,864,583	
Dutiable	13,785,135	16,036,740	2,251,605	
Tobacco	1,449,353	2,116,866	667,513	
Metals	8,018,993	8,315,061	296,068	
Chemicals, dyes, and tannics	2,226,426	1,968,638		257,788
Oils	3,511,519	3,451,306		60,213
Raw materials:				
For textiles	19,646,679	25,347,459	5,700,780	
For other industries	22,037,233	22,131,891	94,658	
Manufactured articles	37,103,195	35,598,205		1,504,990
Miscellaneous goods	6,103,399	6,641,366	537,967	
Parcel post	384,210	455,166	60,956	
Total	179,360,117	192,578,227	13,218,110	
Ten months ended October 31.				
Animals, living, for food	36,053,196	43,917,212	7,864,016	
Articles of food and drink:				
Duty free	563,468,864	570,815,625	7,346,761	
Dutiable	98,265,653	98,989,817	724,164	
Tobacco	13,608,090	17,468,366	3,860,276	
Metals	74,888,494	82,913,866	8,025,372	
Chemicals, dyes, and tannics	27,286,076	29,039,470	1,753,394	
Oils	31,641,097	32,861,881	1,220,784	
Raw materials:				
For textiles	266,874,666	265,699,619		1,175,047
For other industries	177,883,481	193,692,454	15,808,973	
Manufactured articles	307,830,232	333,512,308	25,682,076	
Miscellaneous goods	56,284,268	58,437,361	2,153,093	
Parcel post	4,017,947	4,591,640	573,693	
Total	1,658,102,064	1,731,939,619	73,837,555	

Exports.

Articles.	1895.	1896.	Increase.	Decrease.
Month of October.				
Animals, living	$414,247	$474,780	$60,533	
Articles of food and drink	6,021,545	5,922,926		$99,249
Raw materials	8,174,226	7,547,431		626,795
Manufactured and partly manufactured articles:				
Textiles and yarns	42,833,383	39,605,459		3,227,924
Metals and metal goods	13,452,461	15,275,016	1,822,555	
Machinery and millwork	7,746,570	7,972,980	226,410	
Apparel and personal effects	4,253,779	4,368,709	114,930	
Chemicals, chemical products, and medicinal preparations	3,438,800	3,169,771		269,029
All other	14,343,628	15,408,598	1,064,970	
Total manufactures	86,178,700	85,800,533		368,168
Parcel post	674,213	781,737	107,524	
Total British exports	101,352,932	100,526,777		826,155
Foreign and colonial products	26,570,376	23,157,421		3,412,955
Total exports	127,923,308	123,684,198		4,239,110
Ten months ended October 31.				
Animals, living	3,187,950	3,073,410		114,540
Articles of food and drink	43,925,480	45,138,690	1,213,210	
Raw materials	75,415,343	71,933,976		3,481,367
Manufactured and partly manufactured articles:				
Textiles and yarns	410,941,330	433,811,110	22,869,780	
Metals and metal goods	113,717,549	136,438,046	22,720,497	
Machinery and millwork	61,308,657	68,669,698	7,361,041	
Apparel and personal effects	37,081,384	42,984,142	5,902,758	
Chemicals, chemical products, and medicinal preparations	33,517 222	33,679,308	161,096	
All other	127,864,189	136,220,551	8,357,362	
Total manufactures	784,430,331	851,802,855	67,372,524	
Parcel post	5,169,205	6,560,105	1,390,900	
Total British exports	912,128,309	978,509,036	66,380,727	
Foreign and colonial products	246,118,616	226,139,087		19,978,529
Total exports	1,158,246,925	1,204,648,123	46,401,198	

Résumé for the ten months.

Description.	1895.	1896.	Increase.
Imports	$1,658,102,064	$1,731,939,619	$73,837,555
Exports	1,158,246,925	1,204,648,123	46,401,198
Excess of imports	499,855,139	527,291,496	

Telegraph Construction in Hunan, China.—The North China Herald, of Shanghai, of September 4, 1896, prints a translation of a proclamation by Ch'en Pao-chen, governor of Hunan, dwelling upon the advantages to be derived from the construction of telegraph lines in the province, and exhort-

ing the people not to be wrongfully influenced and destroy the telegraph lines and poles now being erected connecting Changsha, the capital, with Wuchang, the capital of the sister province of Hupeh. According to a private letter from Changsha, * * * it is reported that, apparently acknowledging the value of telegraphs and that they will not be made to interfere with the people's graves and private property of the gentry and literati, the construction of the line had been going on apace, without the slightest hindrance on the part of the inhabitants where the new line is to pass; whereas when, in 1891, an attempt was made by the imperial Chinese telegraph administration, at the request of the governor, Wu Ta-cheng, to erect telegraph poles within the borders of the frontier town of Lichou, the inhabitants of the place rose en masse and so badly injured the working party and military escort that they had to fly for their lives, abandoning many thousand taels' worth of telegraph material to the tender mercies of the infuriated mob. Several lives were lost in this affair and a certain local provincial graduate, or chüjen, who was accused of giving countenance to the innovation, was also sacrificed to the fury of the bloodthirsty mob, led by the bigoted gentry and literati of Lichou.

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